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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 10

In The Matter Of:	
GOULD SUPERFUND SITE, SOILS UNIT PORTLAND, OREGON	EPA DOCKET NO. 1091-01-10-106
NL INDUSTRIES, INC., GOULD, INC., JOHNSON CONTROLS, INC., EXIDE, INC. AT&T TECHNOLOGIES, INC., RHONE-POULENC, BURLINGTON NORTHERN RAILROAD CO., ESCO CORPORATION, AND SCHNITZER INVESTMENT CORP.	**FIRST AMENDMENT TO ADMINISTRATIVE ORDER**
Respondents.	
Proceeding Under Section 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended 42 U.S.C. § 9606(a)	

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I. INTRODUCTION AND JURISDICTION

1.1 This First Amendment to Administrative Order ("Amended Order") directs NL Industries, Inc. ("NL"), Gould, Inc. ("Gould"), Johnson Controls, Inc., ("Johnson"), Exide, Inc., ("Exide"), AT&T Technologies, Inc. ("AT&T"), Rhone-Poulenc, and Burlington Northern Railroad Co.("BNRC"), the ESCO Corporation ("ESCO"), and the Schnitzer Investment Corp. ("Schnitzer") (hereinafter collectively referred to as "Respondents"), to perform a remedial action for the remedy set forth in the Amended Record of Decision ("ROD") for the Gould Superfund Site ("Site"), soils unit, issued on June 3, 1997. This Amended Order is issued to Respondents by the United States Environmental Protection

Agency ("EPA") under the authority vested in the President of the United States by Section 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended ("CERCLA"), 42 U.S.C. § 9606(a). This authority was delegated to the Administrator of EPA by Executive Order 12580 (52 Fed. Reg. 2926, January 29, 1987), and was further delegated to EPA Regional Administrators on September 13, 1987, by EPA Delegation No. 14-14-B. This authority is conferred on the EPA, Region 10, Director, Office of Environmental Cleanup, by Regional Redelegation Order signed by the Regional Administrator, Region 10.

1.2 This Amended Order amends the Administrative Order entitled In the Matter of the Gould Superfund Site, EPA Docket No. 1091-01-10-106 which EPA issued on January 22, 1992 ("Order"). In the event that the terms and conditions of the Amended Order and the Order are inconsistent, the terms of the Amended Order shall apply. The terms and conditions of the Order shall otherwise remain in effect.

II. FINDINGS OF FACT

2.1 The following constitutes factual determinations made by the EPA:

2.2 The Site includes property presently owned by Gould, Rhone-Poulenc, ESCO, Schnitzer, and BNRC and encompasses approximately twenty (20) to thirty (30) acres, located at about 5909 N.W. 61st Avenue in Portland, Multnomah County, Oregon, as

described in the ROD at page 1, and includes the areal extent of contamination and all suitable areas in very close proximity to the contamination necessary for implementation of the response action. The Site is located in a heavily industrialized area northwest of downtown Portland, approximately one thousand (1,000) feet southwest of the Willamette River;

2.3 Doane Lake, once a low and swampy area between the Willamette River and the hills near the Site, is located within the Site. Filling activities have reduced the lake to two (2) segments, known as East Doane Lake and West Doane Lake. East Doane Lake occupies a portion of the Gould Property;

2.4 The Willamette River flows generally north through western Multnomah County to the Columbia River. Anadromous fish along with warm water fish and other aquatic life are found in the river;

2.5 Three principal aquifers are present beneath the Site: (1) the "fill aquifer", which flows through the fill material and is the shallowest aquifer; (2) the "alluvial aquifer", an unconfined body of groundwater in the sandy alluvial deposits; and (3) the "basalt aquifer", the deepest aquifer system in the Columbia River basalt. Surface runoff in ditches, leakage from storm drains and sewers, and inflow from Doane Lake and the Willamette River contribute recharge to the fill aquifer. The alluvial aquifer is recharged primarily by direct infiltration of precipitation. There are numerous groundwater

monitoring wells on- and off-Site. Groundwater flow from the Site is generally north-northwest toward a discharge area along the Willamette River;

2.6 Secondary lead smelting, including battery recycling operations, began on the Gould property on or about 1949. At that time, the smelting facility was owned and operated by Morris P. Kirk and Son, Inc. ("Kirk"). Kirk was a subsidiary of NL, a New Jersey corporation and operated on-Site from on or about 1949 to 1971. NL, in 1971, purchased the property where the lead smelting activities occurred and acquired Kirk by merger. NL manufactures chemicals, oil field equipment, drilling muds and fluids, and provides oil field services. NL, through Kirk or by itself, operated refining kettles, casting facilities, and a lead oxide production facility on-Site between 1949 and 1979, and operated the secondary lead smelter on-Site from 1949 to approximately 1972. Gould bought a large portion of the Site and the lead smelting facility from NL in January 1979 and continued ongoing operations. Gould suspended battery recycling operations in October 1979, and terminated the lead oxide process in May 1981. From 1949 to the present, waste materials made up in part of several types of hazardous substances, including but not limited to lead, sulfuric acid, arsenic, cadmium, chromium, and zinc have been disposed of at the Site.

2.7 Rhone-Poulenc owns property within the Site which lies adjacent to the Gould property and contains a

substantial quantity of the battery casing waste materials disposed of at the Site. This property was acquired by Rhone-Poulenc in 1966 and was previously owned by the Northern Pacific Railway Company, and the Spokane, Portland & Seattle Railway Company. Burlington Northern acquired these entities by merger in 1970 and 1979, respectively. On November 1, 1950, the Spokane, Portland & Seattle Railway Company entered into an agreement with Kirk, pursuant to which Kirk disposed of crushed batteries on the Railway company's property. This disposal activity continued until 1972 or 1973. Disposal of the battery casing wastes resulted in the release of lead and other hazardous substances throughout the Rhone-Poulenc property within the Site.

2.8 Gould, Johnson, Exide, AT&T, and Schnitzer each sent large quantities of used batteries and/or scrap lead to the lead smelting facility. These materials contained hazardous substances and were no longer useful products when sent to the Site. The hazardous substances contained in these materials are the type which were released into the environment at the Site.

2.9 Schnitzer owns a portion of East Doane Lake and other property within the Site. Battery casing waste materials and auto fluff waste containing lead and other hazardous substances were disposed of in portions of East Doane Lake owned by Schnitzer. The sediments in East Doane Lake, including the lake area owned by Schnitzer, are contaminated by lead and other hazardous substances as a result of these and

other past disposal practices.

2.10 ESCO owns property within the Site which lies adjacent to the Gould property; battery casing waste materials containing lead and other hazardous substances were disposed of in this area of the Site. These and other past disposal practices have caused a release of lead and other hazardous substances on the ESCO property.

2.11 The State of Oregon Department of Environmental Quality ("ODEQ") issued a Notice of Violation and Intent to Assess Civil Penalties to Gould in July 1981 for discharging wastewater into Doane Lake without a permit and for releasing lead oxide dust emissions. Analysis of samples taken by ODEQ found total lead concentration of 285 milligrams per liter ("mg/l") in the discharged wastewater. This exceeded EPA and ODEQ Willamette Basin ambient water quality standards for lead. In April 1981, ODEQ sampled surface water and sediment from Doane Lake and yard material at the Site. Analysis of these samples indicated concentrations of lead ranging from 19 to 450,000 parts per million ("ppm") lead. ODEQ also monitored airborne particulate from June through September of 1981, during Gould's recycling activities. Airborne lead concentrations exceeded ODEQ, 3.0 micrograms per cubic meter ("ug/m3") monthly average, and EPA, 1.5 ug/m3 quarterly average, ambient air standards. Gould performed groundwater monitoring at wells located on the Site in March 1982. Analysis of this monitoring

revealed total lead concentrations ranging from 0.04 mg/l to 0.29 mg/l. The EPA primary drinking water standard for lead is 0.05 mg/l;

2.12 Pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, EPA placed the Site on the National Priorities List in September of 1983, 48 Fed. Reg. 40658;

2.13 Response activities for the Site have been divided into operable units for soil and groundwater. This Amended Order addresses remedial action for the soil operable unit.

2.14 From about August 29, 1985, to about February 1988, Respondents, under EPA oversight, undertook a Remedial Investigation ("RI") and Feasibility Study ("FS") for the soils operable unit of the Site, pursuant to CERCLA and the National Contingency Plan, ("NCP") 40 C.F.R. Part 300.

2.15 The RI found that the groundwater in the alluvial aquifer immediately beneath the battery cases contains dissolved lead in concentrations up to 0.21 mg/l;

2.16 During the RI, surface water samples were taken from Doane Lake and the Willamette River in locations near the Site. Water samples from Doane Lake contained dissolved lead in concentrations up to 0.28 mg/l;

2.17 Airborne lead concentrations as high as 12.76 ug/m3 were measured during RI activities at the Site;

2.18 Also, during the RI, approximately eighty-

seven thousand (87,000) tons of buried battery casings and battery casings in surface piles were identified at the Site. The total lead concentrations of some of these casings were as high as nineteen percent (19%). A solid waste exhibiting the characteristic of EP toxicity is a hazardous waste pursuant to Section 3001 of the Resource Conservation and Recovery Act ("RCRA"), 42 U.S.C. § 6921. A hazardous waste under RCRA is also a hazardous substance as defined by section 101(14) of CERCLA, 42 U.S.C. § 9601(14). The maximum concentration of contaminant for the characteristic of EP toxicity for lead is 5.0 mg/l. All of the battery casing material contained lead at levels exceeding the characteristic of the Extraction Procedure Toxicity ("EP Toxicity") for lead; the EP toxicity concentrations of lead in the battery casing material ranged from 21 mg/l to 220 mg/l. Approximately twenty-two thousand (22,000) cubic yards of soils, sediment, and matter were also identified at the Site which exceeded the characteristic of EP toxicity for lead;

2.19 An Endangerment Assessment was performed which identified the potential for human health and exposure risks. The Endangerment Assessment showed that if no remedial action is taken, inhalation and ingestion, due to direct contact, may result in lead exposure at a rate that exceeds the acceptable intake level, as defined by the Superfund Public Health Evaluation Manual;

2.20 Hazardous substances, particularly lead, at the Site pose a threat to human health and other biological ecosystems by releases to surface water, groundwater, and air pathways;

2.21 Surface water runoff may transport contaminants deposited on the ground or leached from battery casings to Doane Lake. If Doane Lake overflows, contaminants may be transported to the Willamette River through the storm drain;

2.22 Contaminants may enter the groundwater pathways by percolation of contaminated surface water, and by leaching from buried battery casings and contaminated soil. The groundwater could transport contaminants to the Willamette River;

2.23 The terrestrial and aquatic organisms and human population in nearby residential areas, in the Willamette River, and in the surrounding industrial area may be the possible receptors of hazardous substances migrating off-Site;

2.24 Pursuant to Section 117 of CERCLA, 42 U.S.C. § 9617, EPA published notice of the completion of the FS and of the proposed plan for remedial action, and provided opportunity for public comment on the proposed remedial action.

2.25 The decision of EPA setting forth the remedial action for soils operable unit of the Site is embodied in the ROD executed on March 31, 1988. The State of Oregon concurred with EPA's ROD decision. The ROD is supported by an administrative record that contains the documents and information

upon which EPA based the selection of the remedial action for the soils operable unit at the Site.

2.26 The remedy for the soils unit addressed approximately 87,000 tons of buried battery casings, over 22,000 yards of contaminated soil and sediment, and other wastes found at the Site. The remedial action chosen in the ROD was designed to: (1) remove lead from the battery casings through recycling; (2) reduce the mobility of lead in the contaminated soil, sediment, and matte at the Site through fixation; (3) continue monitoring of surface water and groundwater at the Site while additional study of contamination in these areas is completed; and, (4) monitor ambient air around the Site to ensure that remedial actions are carried out in a manner that is protective of public health.

2.27 On February 29, 1989, EPA sent Special Notice Letters to Gould and NL under the authority of Section 122 of CERCLA, 42 U.S.C. § 9622 to negotiate the Remedial Design/Remedial Action. On June 15, 1989, a Consent Decree was entered into whereby NL agreed to perform certain pre-design studies which evaluated the remedy selected in the ROD. See United States of America v. NL Industries, Inc., Civil No. 89-408-PA (D.Or. June 15, 1989). EPA approved the final pre-design study on March 4, 1991. The pre-design study was performed by Canonie Environmental Services Corporation, a consultant to NL. The pre-design study recommends that

performance of the remedial action begin during the wet season, which is October to May, when approximately 88% of the annual precipitation occurs at the Site. NL also agreed to perform the remedial design. EPA approved the remedial design for the soils operable unit on September 30, 1991.

2.28 On January 22, 1992, EPA issued a Unilateral Administrative Order ("Gould UAO") directing NL, Gould, Johnson, Exide, AT&T, Rhone-Poulenc, and BNRC to implement the remedial actions selected in the 1988 ROD. Pursuant to the Gould UAO, these parties began excavation, treatment, and recycling of contaminated surface soils, surface piles of battery casings, buried battery casings, matte, and other contaminated debris.

2.29 Additional Site investigation activities performed during the remedial action revealed that pre-ROD estimates of volumes of contaminated waste materials were inaccurate. For example, the investigation revealed that quantities of battery casings on the Gould property were significantly overestimated, and that quantities of matte were significantly underestimated.

2.30 The battery plant was designed and used to separate and treat contaminated battery casings and produce coarse lead, fine lead, plastic, and ebonite for recycling. It did not operate as efficiently as anticipated. As a result, the cost of operating the battery plant increased significantly. In addition, only limited quantities of the fine lead and ebonite

processed by the battery plant were recyclable. As a consequence of the revised Site characterization and problems associated with battery plant operation, the Gould UAO Respondents requested that they be allowed to suspend performance of the battery plant operations and evaluate alternative remedial actions. EPA approved this request on May 24, 1994.

2.31 After May 24, 1994, the Gould UAO Respondents continued to treat plastic for recycle and stabilize other contaminated smelter wastes. In addition, Respondents performed additional Site investigations including a focused feasibility study ("FFS"). The FFS evaluated the remedial actions selected in the 1988 ROD as well as other potential cleanup alternatives, including off-Site disposal and on-Site treatment and disposal. The FFS was submitted to EPA on September 30, 1994.

2.32 Additional Site investigations, revealed that areas of the Site soil operable unit were contaminated by organic wastes.

2.33 EPA determined that the FFS did not adequately address organic contamination. Accordingly, EPA directed the Gould UAO Respondents to perform additional sampling and analysis of organic contamination within the Site soil operable unit.

2.34 The Gould UAO Respondents completed the additional post-ROD studies and cleanup evaluation on January 26, 1996, at which time they submitted the proposed amended remedy

document.

2.35 EPA issued a proposed plan setting forth EPA's preferred alternative for amending the 1988 ROD on April 1, 1996. EPA's preferred alternative proposed, inter alia, construction of an on-Site containment facility ("OCF") with double liners and a leachate collection system, and consolidation of treated and untreated contaminated waste in the OCF. EPA provided the public with a thirty (30) day period to comment on the proposed plan. The public comment was extended thirty (30) days at the request of one party which commented on the proposed plan.

2.36 On June 3, 1997, EPA published an amended ROD for the Site's soil operable unit. The amended ROD selected the following remedial actions:

* Perform design studies to evaluate site constraints and design parameters, including consolidation and settlement, lateral and vertical support, dewatering sediments, and the hydrogeologic impact of filling East Doane Lake remnant and the open excavation in the Lake Area (previously referred to as the Phase III Area) portion of the Rhone-Poulenc property;

* Construction of an OCF, which has a leachate collection system and allows for implementation of future Rhone-Poulenc cleanup actions, on the Gould property;

* Excavation and dewatering of East Doane Lake sediments contaminated above specified cleanup levels;

* Excavation of the remaining battery casings on the Gould property;

* Treatment (stabilization or fixation) of the lead fines stockpile (S-15), the screened Gould excavation stockpile (S-22); and other lead contaminated material identified as principal threat waste;

* Consolidating contaminated material, including sediments, treated and untreated stockpiled materials, casings, soil and debris in the lined and capped OCF;

* Filling the East Doane Lake remnant and the open excavation in the Lake Area of the Rhone-Poulenc property;

* Institutional controls, such as deed restrictions or environmental protection easements, which provide access to EPA for the purpose of evaluating the effectiveness of the remedial action, and which limit future use of properties within the Site to (1) industrial operations or other uses compatible with the protective level of cleanup achieved after implementation of the selected remedial action, and

(2) to uses which do not damage the OCF cap and liner system or cause releases of buried materials;

* Performing ground-water monitoring to ensure the effectiveness of the cleanup and that contaminants were not mobilized during its implementation; and

* Long-term operation and maintenance requirements and reviews conducted no less often than every five (5) years to ensure the remedy continues to provide adequate protection of human health and the environment.

III. CONCLUSIONS OF LAW AND DETERMINATIONS

3.1. The Site is a "facility" as defined in section 101(9) of CERCLA, 42 U.S.C. § 9601(9).

3.2. Respondents are "persons" as defined in section 101(21) of CERCLA, 42 U.S.C. § 9601(21).

3.3. Respondents are "liable parties" as defined in section 107(a) of CERCLA, 42 U.S.C. § 9607(a), and are subject to the requirements of this Amended Order pursuant to section 106(a) of CERCLA, 42 U.S.C. § 9606(a).

3.4. The substances listed in paragraph 2.6 are found at the Site and are "hazardous substances" as defined in section 101(14) of CERCLA, 42 U.S.C. § 9601(14).

3.5. The past and present disposal and migration

of hazardous substances from the Site are a "release" as defined in section 101(22) of CERCLA, 42 U.S.C. § 9601(22).

3.6. The potential for future migration of hazardous substances from the Site poses a threat of a "release" as defined in section 101(22) of CERCLA, 42 U.S.C. § 9601(22).

3.7. The release and continued threat of release of one or more hazardous substances from the Site may present an imminent and substantial endangerment to the public health or welfare or the environment.

3.8. The contamination and endangerment at this Site constitute an indivisible injury. The actions required by this Amended Order are necessary to protect the public health, welfare, and the environment.

IV. NOTICE TO THE STATE

4.1 On May 29, 1997, prior to issuing this Amended Order, EPA notified the State of Oregon Department of Environmental Quality, that EPA would be issuing this Amended Order.

V. AMENDED ORDER

5.1 Based on the foregoing, Respondents are hereby ordered, jointly and severally, to comply with the following provisions, including but not limited to all attachments to this Amended Order, all documents incorporated by reference into this Amended Order, and all schedules and deadlines in this Amended Order, attached to this Amended Order,

or incorporated by reference into this Amended Order.

VI. DEFINITIONS

6.1 Unless otherwise expressly provided herein, terms used in this Amended Order which are defined in CERCLA or in regulations promulgated under CERCLA shall have the meaning assigned in the statute or its implementing regulations. Whenever terms listed below are used in this Amended Order or in the documents attached to this Amended Order or incorporated by reference into this Amended Order, the following definitions shall apply:

(A) "CERCLA" shall mean the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§ 9601, et seq.;

(B) "Day" shall mean a calendar day unless expressly stated to be a working day. "Working day" shall mean a day other than a Saturday, Sunday, or Federal holiday. In computing any period of time under this Amended Order, where the last day would fall on a Saturday, Sunday, or Federal holiday, the period shall run until the end of the next working day;

(C) "EPA" shall mean the United States Environmental Protection Agency;

(D) "ODEQ" shall mean the Oregon Department of Environmental Quality;

(E) "National Contingency Plan" or "NCP" shall mean the National Oil and Hazardous Substance Pollution Contingency

Plan promulgated pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, codified at 40 C.F.R. Part 300, including any amendments thereto;

(F) "Operation and Maintenance" or "O & M" shall mean all activities required to maintain the effectiveness of the response actions;

(G) "Paragraph" shall mean a portion of this Amended Order identified by an Arabic numeral;

(H) "Performance Standards" shall mean those cleanup standards, standards of control, and other substantive requirements, criteria or limitations, identified in the Record of Decision, the Remedial Design, and the Scope of Work, that the Remedial Action and Work required by this Amended Order must attain and maintain;

(I) "Record of Decision" or "ROD" shall mean the EPA Amended Record of Decision relating to the Site, Soils Operable Unit, signed on June 3, 1997 by the Regional Administrator, EPA Region 10, and all attachments thereto, and modifications and amendments thereto;

(J) "Remedial Action" or "RA" shall mean those activities to be undertaken by Respondents to implement the final plans and specifications provided in the previously approved Remedial Design, or to implement the remedy as described in the Record of Decision, including any additional activities required under Sections X, XI, XII, XIII, and/or XIV of this Amended

Order;

(K) "Remedial Design" or "RD" shall mean those activities to be undertaken by Respondents to develop the final plans and specifications for the Remedial Action pursuant to the Remedial Design Work Plan.

(L) "Response Costs" shall mean all costs, including direct costs, indirect costs, and accrued interest incurred by the United States to perform or support response actions at the Site. Response costs include but are not limited to the costs of overseeing the Work, such as the costs of reviewing or developing plans, reports and other items pursuant to this Amended Order and costs associated with verifying the Work;

(M) "Scope of Work" or "SOW" shall mean the Scope of Work which is a statement for implementation of the Remedial Design, Remedial Action, and Operation and Maintenance at the Site's soils unit, as set forth in Attachment B of this Amended Order. The Scope of Work is incorporated into this Amended Order and is an enforceable part of this Amended Order.

(N) "Section" shall mean a portion of this Amended Order identified by a roman numeral and includes one or more paragraphs;

(O) "Site" shall mean the Gould Superfund site, encompassing approximately twenty (20) to thirty (30) acres, located at about 5909 N.W. 61st Avenue in Portland, Multnomah County, Oregon, as described in the ROD at page 1, and the areal

extent of contamination and all suitable areas in very close proximity to the contamination necessary for implementation of the response action;

(P) "State" shall mean the State of Oregon;

(Q) "United States" shall mean the United States of America; and

(R) "Work" shall mean all activities Respondents are required to perform under this Amended Order to implement the ROD for the soils unit of the Site, including Remedial Design, Remedial Action, Operation and Maintenance, and any activities required to be undertaken pursuant to Sections VII through XXIII, and XXVI of this Amended Order.

VII. NOTICE OF INTENT TO COMPLY

7.1 Respondents shall provide, not later than ten (10) days after the effective date of this Amended Order, written notice to EPA's Remedial Project Manager (RPM) stating whether Respondents will comply with the terms of this Amended Order. If Respondents do not unequivocally commit to perform the RD/RA as provided by this Amended Order, they shall be deemed to have violated this Amended Order and to have failed or refused to comply with this Amended Order. Respondents' written notice shall describe, using facts that exist on or prior to the effective date of this Amended Order, any "sufficient cause" defenses asserted by Respondents under sections 106(b) and 107(c)(3) of CERCLA. The absence of a response by EPA to the

notice required by this paragraph shall not be deemed to be acceptance of Respondents' assertions.

VIII. PARTIES BOUND

8.1 This Amended Order shall apply to and be binding upon Respondents identified in paragraph 1.1, their directors, officers, employees, agents, successors, and assigns. Respondents are jointly and severally responsible for carrying out all activities required by this Amended Order. No change in the ownership, corporate status, or other control of any Respondents shall alter any responsibilities of such Respondents under this Amended Order.

8.2 Respondents shall provide a copy of this Amended Order to any prospective owners or successors before a controlling interest in Respondent's assets, property rights, or stock are transferred to the prospective owner or successor. Respondents shall provide a copy of this Amended Order to each contractor, sub-contractor, laboratory, or consultant retained to perform any Work under this Amended Order, within five (5) days after the effective date of this Amended Order or on the date such services are retained, whichever date occurs later. Respondents shall also provide a copy of this Amended Order to each person representing any Respondents with respect to the Site or the Work and shall condition all contracts and subcontracts entered into hereunder upon performance of the Work in conformity with the terms of this Amended Order. With regard to the

activities undertaken pursuant to this Amended Order, each contractor and subcontractor shall be deemed to be related by contract to the Respondents within the meaning of section 107(b)(3) of CERCLA, 42 U.S.C. § 9607(b)(3). Notwithstanding the terms of any contract, Respondents are responsible for compliance with this Order and for ensuring that their contractors, subcontractors and agents comply with this Amended Order, and perform any Work in accordance with this Amended Order.

8.3 Within twenty (20) days after the effective date of this Amended Order each Respondent that owns real property comprising all or part of the Site shall record a copy or copies of this Amended Order in the appropriate governmental office where land ownership and transfer records are filed or recorded, and shall ensure that the recording of this Amended Order is indexed to the titles of each and every property at the Site so as to provide notice to third parties of the issuance and terms of this Amended Order with respect to those properties. Respondents shall, within thirty (30) days after the effective date of this Amended Order, send notice of such recording and indexing to EPA.

8.4 Not later than sixty (60) days prior to any transfer of any real property interest in any property included within the Site, Respondents shall submit a true and correct copy of the transfer document(s) to EPA, and shall identify the transferee by name, principal business address and effective date

of the transfer.

IX. WORK TO BE PERFORMED

9.1 Respondents shall cooperate with EPA in providing information regarding the Work to the public. As requested by EPA, Respondents shall participate in the preparation of such information for distribution to the public and in public meetings which may be held or sponsored by EPA to explain activities at or relating to the Site.

9.2 All aspects of the Work to be performed by Respondents pursuant to this Amended Order shall be under the direction and supervision of a qualified project manager, the selection of which shall be subject to approval by EPA. Within five (5) days after the effective date of this Amended Order, Respondents shall notify EPA in writing of the name and qualifications of the project manager, including primary support entities and staff, proposed to be used in carrying out Work under this Amended Order. If at any time Respondents propose to use a different project manager, Respondents shall notify EPA and shall obtain approval from EPA before the new project manager performs any Work under this Amended Order.

9.3 If EPA disapproves of the selection of the project manager, Respondents shall submit to EPA within seven (7) days after receipt of EPA's disapproval of the project manager previously selected, a list of project managers, including primary support entities and staff, that would be acceptable to

Respondents. EPA will thereafter provide written notice to Respondents of the names of the project managers that are acceptable to EPA. Respondents may then select any approved project manager from that list and shall notify EPA of the name of the project manager selected within seven (7) days of EPA's designation of approved project managers.

A. Early Remedial Action

9.4 Within thirty (30) days of the effective of this Order, Respondents shall submit an Early Remedial Action (ERA) Work Plan to EPA for review and approval. The ERA Work Plan shall be developed in accordance with the ROD and the attached Scope of Work. The ERA Work Plan shall include methodologies, plans, and schedules for preliminary Site preparation, including the excavation and temporary stockpiling of East Doane Lake contaminated sediments, and placement of clean fill in East Doane Lake. The plan will include at least the following: (1) construction management plan; (2) construction quality assurance project plan ("CQAP"); (3) construction health and safety plan/contingency plan; (4) transport and disposal plan; (5) air and groundwater monitoring plans; 6) other plans or documents required by the Scope of Work,; and (7) list and schedule of submittals. The CQAP shall describe the approach to quality assurance during construction activities at the Site and shall specify a quality assurance official (QA Official), independent of the construction

contractor, to conduct a quality assurance program during the construction phase of the project. The ERA Work Plan shall also include a schedule for implementing remedial action tasks identified as early actions in the Scope of Work and shall identify the initial formulation of Respondent's Remedial Action Project Team (including the Supervising Contractor). At the same time as they submit the ERA Work Plan, Respondents shall submit to EPA a Health and Safety Plan for field activities required by the ERA Work Plan which conforms to the applicable Occupational Safety and Health Administration and EPA requirements including, but not limited to, 29 C.F.R. § 1910.120.

9.5 Upon approval by EPA, the ERA Work Plan is incorporated into this Amended Order as a requirement of this Amended Order and shall be an enforceable part of this Amended Order.

9.6 Upon approval of the ERA Work Plan by EPA, Respondents shall implement the ERA Work Plan according to the schedules in the ERA Work Plan. Unless otherwise directed by EPA, Respondents shall not commence remedial action at the Site prior to approval of the ERA Work Plan.

9.7 If Respondents seek to retain a construction contractor to assist in the performance of the Remedial Action, then Respondents shall submit a copy of the contractor solicitation documents to EPA not later than five (5) days after publishing the solicitation documents.

9.8 Within ten (10) days after EPA approves the ERA Work Plan, Respondents shall notify EPA, in writing, of the name, title, and qualifications of any construction contractor proposed to be used in carrying out work under this Amended Order. EPA shall thereafter provide written notice of the name(s) of the contractor(s) it approves, if any. Respondents may select any approved contractor from that list and shall notify EPA of the name of the contractor selected within twenty-one (21) days of EPA's designation of approved contractors. If, at any time, Respondents propose to change the construction contractor, Respondents shall notify EPA and shall obtain approval from EPA as provided in this paragraph, before the new construction contractor performs any work under this Amended Order. If EPA disapproves of the selection of any contractor as the construction contractor, Respondents shall submit a list of contractors that would be acceptable to them to EPA within thirty (30) days after receipt of EPA's disapproval of the contractor previously selected.

B. Remedial Design

9.9 Within ninety (90) days after Respondents select an approved Project Manager, Respondents shall submit a Work Plan for the Remedial Design at the Site ("Remedial Design Work Plan" or "RD Work Plan") to EPA for review and approval. The RD Work Plan shall include a step-by-step plan for completing the remedial design for the remedy described in the ROD and for

attaining and maintaining all requirements, including Performance Standards, identified in the ROD. The Remedial Design Work Plan must describe in detail the tasks and deliverables Respondents will complete during the remedial design phase, and a schedule for completing the tasks and deliverables in the Remedial Design Work Plan. The major tasks and deliverables described in the Remedial Design Work Plan shall include, but not be limited to, the following: (1) Sampling and Analysis Plan; (2) Health and Safety Plan; (3) Future Site Safety Implementation Plan; (4) Pilot Study Work Plan; (5) Pilot Study Sampling and Analysis Plan; (6) Pilot Study Health and Safety Plan (if determined by EPA to be applicable); (7) Site Development Work Plan; and (8) Plan for Implementation of Institutional Controls. In addition, the Remedial Design Work Plan shall include a schedule for completion of the Remedial Action Work Plan. The Site Health and Safety Plan shall conform to the applicable Occupational Safety and Health Administration and EPA requirements, including, but not limited to, 54 Fed. Reg. 9294.

9.10 The Remedial Design Work Plan shall be consistent with, and shall provide for implementing the Scope of Work, and shall comport with EPA's "Superfund Remedial Design and Remedial Action Guidance, OSWER Directive 9355.0-4A." Upon approval by EPA, the Remedial Design Work Plan is incorporated into this Amended Order as a requirement of this Amended Order and shall be an enforceable part of this Amended Order.

9.11 Upon approval of the Remedial Design Work Plan by EPA, Respondents shall implement the Remedial Design Work Plan according to the schedule in the approved Remedial Design Work Plan. Any violation of the approved Remedial Design Work Plan shall be a violation of this Amended Order. Unless otherwise directed by EPA, Respondents shall not perform further Work at the Site prior to EPA's written approval of the Remedial Design Work Plan.

9.12 Within forty-five (45) days after EPA approves the Remedial Design Work Plan, Respondents shall submit a Preliminary Design to EPA for review and approval. The Preliminary Design submittal shall include, at a minimum, the following: (1) results of data acquisition activities; (2) design criteria report; (3) preliminary plans and specifications; (4) plans for satisfying permitting requirements; (5) pilot study final report; (6) draft construction schedule; and (7) draft performance standards verification plan.

9.13 Within forty-five (45) days after EPA approves the Preliminary Design, Respondents shall submit a Prefinal Design to EPA for review and approval. The Prefinal Design submittal shall include, at a minimum, the following: (1) prefinal design analyses; (2) prefinal plans and specifications; (3) prefinal construction schedule; (4) draft operation and maintenance Plan; (5) prefinal performance standard verification plan; and (6) construction cost estimate.

9.14 Within thirty (30) days after EPA approves the Prefinal Design, Respondents shall submit a Final Design to EPA for review and approval. The Final Design submittal shall include, at a minimum, the following: (1) complete design analyses; (2) final plans and specifications; (3) final construction schedule; (4) draft operation and maintenance Plan; (5) final performance standard verification plan; (6) construction cost estimate; and (7) supporting documentation which resolves any issues or change requests made as a result of EPA reviews.

9.15 Upon EPA approval, the Final Design is incorporated into this Amended Order as a requirement of this Amended Order and shall be an enforceable part of this Amended Order.

9.16 The Work performed by Respondents pursuant to this Amended Order shall, at a minimum, achieve the Performance Standards specified in the Record of Decision and in Paragraph III of the Scope of Work. The Respondents shall submit for EPA approval a statistical approach to determine when Performance Standards have been achieved.

9.17 Notwithstanding any action by EPA, Respondents remain fully responsible for achievement of the Performance Standards in the ROD and SOW. Nothing in this Amended Order, or in EPA's approval of the SOW, or in the Remedial Design or Remedial Action Work Plans, or approval of any

other submission, shall be deemed to constitute a warranty or representation of any kind by EPA that full performance of the Remedial Design or Remedial Action will achieve the Performance Standards set forth in the ROD and in Paragraph II(B) of the SOW. Respondents' compliance with such approved documents does not foreclose EPA from seeking additional work to achieve the applicable Performance Standards.

9.18 Respondents shall, prior to any off-Site shipment of hazardous substances from the Site to an out-of-state waste management facility, provide written notification to the appropriate state environmental official in the receiving state and to EPA's RPM of such shipment of hazardous substances. However, the notification of shipments shall not apply to any off-Site shipments when the total volume of all shipments from the Site to the state will not exceed ten (10) cubic yards.

a. The notification shall be in writing, and shall include the following information, where available: (1) the name and location of the facility to which the hazardous substances are to be shipped; (2) the type and quantity of the hazardous substances to be shipped; (3) the expected schedule for the shipment of the hazardous substances; and (4) the method of transportation. Respondents shall notify the receiving state of major changes in the shipment plan, such as a decision to ship the hazardous substances to another facility within the same state, or to a facility in another state.

b. The identity of the receiving facility and state will be determined by Respondents following the award of the contract for Remedial Action construction. Respondents shall provide all relevant information, including information under the categories noted in Paragraph 19.a above, on the off-Site shipments as soon as practicable after the award of the contract and before the hazardous substances are actually shipped.

9.19 If EPA determines that the Remedial Action or any portion thereof has not been completed in accordance with this Amended Order, EPA shall notify Respondents, in writing, of the activities that must be undertaken to complete the Remedial Action and shall set forth in the notice a schedule for performance of such activities. Respondents shall perform all activities described in the notice in accordance with the specifications and schedules established therein. If EPA concludes, following the initial or any subsequent certification of completion by Respondents that the Remedial Action has been fully performed in accordance with this Amended Order, EPA may notify Respondents that the Remedial Action has been fully performed. EPA's notification shall be based on present knowledge and Respondents' certification to EPA, and shall not limit EPA's right to perform periodic reviews pursuant to Section 121(c) of CERCLA, 42 U.S.C. § 9621(c), or to take or require any action that in the judgment of EPA is appropriate at the Site, in accordance with 42 U.S.C. §§ 9604, 9606, or 9607.

9.20 Within thirty (30) days after Respondents conclude that the ERA Work have been fully performed and that the Performance Standards have been attained, Respondents shall submit to EPA a written report by a registered professional engineer certifying that the Work has been completed in full satisfaction of the requirements of this Amended Order. EPA shall require such additional activities as may be necessary to complete the Work or EPA may, based upon present knowledge and Respondents' certification to EPA, issue written notification to Respondents that the Work has been completed, as appropriate. EPA's notification shall not limit EPA's right to perform periodic reviews pursuant to Section 121(c) of CERCLA, 42 U.S.C. § 9621(c), or to take or require any action that in the judgment of EPA is appropriate at the Site, in accordance with 42 U.S.C. §§ 9604, 9606, or 9607.

X. FAILURE TO ATTAIN PERFORMANCE STANDARDS

10.1 In the event that EPA determines that additional response action activities are necessary to meet applicable Performance Standards, EPA may notify Respondents that such additional response actions are necessary.

10.2 Unless otherwise stated by EPA, within thirty (30) days of receipt of notice from EPA that additional response actions are necessary to meet any applicable Performance Standards, Respondents shall submit for EPA approval a work plan for the additional response actions. This work plan shall

conform to the applicable requirements of Sections IX, XVI, and XVII of this Amended Order. Upon EPA approval of this work plan pursuant to Section XIV, Respondents shall implement such approved work plan for additional response actions in accordance with the provisions and schedule contained therein.

XI. EPA PERIODIC REVIEW

11.1 Under Section 121(c) of CERCLA, 42 U.S.C. § 9621(c), and any applicable regulations, EPA may review the Site to assure that the Work performed pursuant to this Amended Order adequately protects public health and the environment. Until such time as EPA certifies completion of the Work, Respondents shall conduct requisite studies, investigations, or other response actions as determined necessary by EPA in order to permit EPA to conduct the review under section 121(c) of CERCLA. As a result of any review performed under this paragraph, Respondents may be required to perform additional Work or to modify the Work previously performed.

XII. ADDITIONAL RESPONSE ACTIONS

12.1 EPA may determine that in addition to the Work identified in this Amended Order and attachments to this Amended Order, additional response action may be necessary to protect public health or the environment. If EPA determines that such additional response actions are necessary, EPA may require Respondents to submit a work plan for additional response actions. EPA may also require Respondents to modify any plan,

design, or other deliverable required by this Amended Order, including any approved modifications.

12.2 Not later than thirty (30) days after receiving EPA notice that additional response actions are required pursuant to this Section, Respondents shall submit a work plan for the additional response activities to EPA for review and approval. Upon approval by EPA, the work plan is incorporated into this Amended Order as a requirement of this Amended Order and shall be an enforceable part of this Amended Order. Upon approval of the work plan by EPA, Respondents shall implement the work plan according to the standards, specifications, and schedule in the approved work plan. Respondents shall notify EPA of their intent to perform such additional response actions within seven (7) days after receipt of EPA's request for such additional response actions.

XIII. ENDANGERMENT AND EMERGENCY RESPONSE

13.1 In the event of any action or occurrence during the performance of the Work which causes or threatens to cause a release of a hazardous substance or which may present an immediate threat to public health or welfare or the environment, Respondents shall immediately take all appropriate action to prevent, abate, or minimize the threat, and shall immediately notify EPA's RPM or, if the RPM is unavailable, EPA's Alternate RPM. If neither of these persons is available Respondents shall notify the EPA Emergency Response Unit, Region 10. Respondents

shall take such action in consultation with EPA's RPM and in accordance with all applicable provisions of this Amended Order, including but not limited to the Health and Safety Plan and the Contingency Plan. In the event that Respondents fail to take appropriate response action as required by this Section, and EPA takes that action instead, Respondents shall reimburse EPA for all costs of the response action not inconsistent with the NCP. Respondents shall pay the response costs in the manner described in Section XXIV of this Amended Order, within thirty (30) days of Respondents' receipt of demand for payment and a cost summary of the costs incurred.

13.2 Nothing in the preceding paragraph shall be deemed to limit any authority of the United States to take, direct, or order all appropriate action to protect human health and the environment or to prevent, abate, or minimize an actual or threatened release of hazardous substances on, at, or from the Site.

XIV. EPA REVIEW OF SUBMISSIONS

14.1 After review of any deliverable, plan, report or other item which is required to be submitted for review and approval pursuant to this Amended Order, EPA may: (a) approve the submission; (b) approve the submission with modifications; (c) disapprove the submission and direct Respondents to re-submit the document after incorporating EPA's comments; or (d) disapprove the submission and assume responsibility for performing all or

any part of the response action. As used in this Amended Order, the terms "approval by EPA," "EPA approval," or a similar term means the action described in paragraphs (a) or (b) of this paragraph.

14.2 In the event of approval or approval with modifications by EPA, Respondents shall proceed to take any action required by the plan, report, or other item, as approved or modified by EPA.

14.3 Upon receipt of a notice of disapproval or a request for a modification, Respondents shall, within twenty-one (21) days or such longer time as specified by EPA in its notice of disapproval or request for modification, correct the deficiencies and resubmit the plan, report, or other item for approval. Notwithstanding the notice of disapproval, or approval with modifications, Respondents shall proceed, at the direction of EPA, to take any action required by any non-deficient portion of the submission.

14.4 If any submission or resubmission is not approved by EPA, Respondents shall have failed to comply with and properly provide remedial action in accordance with this Amended Order.

XV. PROGRESS REPORTS

15.1 In addition to the other deliverables required by this Amended Order, Respondents shall provide monthly progress reports to EPA with respect to actions and activities

undertaken pursuant to this Amended Order. The progress reports shall be submitted on or before the 10th day of each month following the effective date of this Amended Order. Respondents' obligation to submit progress reports continues until EPA gives Respondents written notice to the contrary. At a minimum these progress reports shall: (1) describe the actions which have been taken to comply with this Amended Order during the prior month; (2) include all results of sampling and tests and all other data received by Respondents and not previously submitted to EPA; (3) describe all work planned for the next month with schedules relating such work to the overall project schedule for RA completion; and (4) describe all problems encountered and any anticipated problems, any actual or anticipated delays, and solutions developed and implemented to address any actual or anticipated problems or delays.

XVI. QUALITY ASSURANCE, SAMPLING, AND DATA ANALYSIS

16.1 Respondents shall use the quality assurance, quality control, and chain of custody procedures described in the "EPA NEIC Policies and Procedures Manual," May 1978, revised May 1986, EPA-330/9-78-001-R, EPA's "Guidelines and Specifications for Preparing Quality Assurance Program Documentation," June 1, 1987, EPA's "Data Quality Objective Guidance," (EPA/540/G87/003 and 004), and any amendments to these documents, while conducting all sample collection and analysis activities required herein by any plan. To provide quality assurance and maintain quality

control, Respondents shall:

A. Use only laboratories which have a documented Quality Assurance Program that complies with EPA guidance document QAMS-005/80;

B. Ensure that the laboratory used by the Respondents for analyses, performs according to a method or methods deemed satisfactory to EPA and submits all protocols to be used for analyses to EPA at least fourteen (14) days before beginning analysis; and

C. Ensure that EPA personnel and EPA's authorized representatives are allowed access to the laboratory and personnel utilized by the Respondents for analyses.

Respondents shall notify EPA not less than fourteen (14) days in advance of any sample collection activity. At the request of EPA, Respondents shall allow split or duplicate samples to be taken by EPA or its authorized representatives, of any samples collected by Respondents with regard to the Site or pursuant to the implementation of this Amended Order. In addition, EPA shall have the right to take any additional samples that EPA deems necessary.

XVII. COMPLIANCE WITH APPLICABLE LAWS

17.1 All activities undertaken by Respondents pursuant to this Amended Order shall be performed in accordance with the requirements of all Federal and State laws and regulations. EPA has determined that the activities contemplated by this Amended Order are not inconsistent with the NCP.

17.2 Except as provided in section 121(e) of CERCLA, 42 U.S.C. § 9621(e), and the NCP, no permit shall be required for any portion of the Work conducted entirely on-Site.

Where any portion of the Work requires a Federal or state permit or approval, Respondents shall submit timely applications and take all other actions necessary to obtain and to comply with all such permits or approvals.

17.3 This Amended Order is not, and shall not be construed to be, a permit issued pursuant to any Federal or state statute or regulation.

17.4 All materials removed from the Site shall be disposed of or treated at a facility approved by EPA's RPM and in accordance with section 121(d)(3) of CERCLA, 42 U.S.C. § 9621(d)(3); with EPA "Revised Off-Site Policy," OSWER Directive 9834.11, November 13, 1987; and with all other applicable Federal, state, and local requirements.

XVIII. REMEDIAL PROJECT MANAGER

18.1 All communications, whether written or oral, from Respondents to EPA shall be directed to EPA's Remedial Project Manager (RPM) or Alternate Remedial Project Manager. Respondents shall submit to EPA three copies of all documents, including plans, reports, and other correspondence, which are developed pursuant to this Amended Order, and shall send these documents by overnight mail unless otherwise specified by EPA.

EPA's Remedial Project Manager is:

Mr. Chip Humphrey
U.S. Environmental Protection Agency
811 S.W. Sixth Avenue, 3rd Floor
Portland, Oregon 97204

18.2 EPA has the unreviewable right to change its

Remedial Project Manager or Alternate Remedial Project Manager. If EPA changes its Remedial Project Manager or Alternate Remedial Project Manager, EPA will inform Respondents in writing of the name, address, and telephone number of the new Remedial Project Manager or Alternate Remedial Project Manager.

18.3 EPA's RPM and Alternate RPM shall have the authority lawfully vested in a Remedial Project Manager and On-Scene Coordinator (OSC) by the National Contingency Plan, 40 C.F.R. Part 300. EPA's RPM or Alternate RPM shall have authority, consistent with the National Contingency Plan, to halt any work required by this Amended Order, and to take any necessary response action.

18.4 Within ten (10) days after the effective date of this Amended Order, Respondents shall designate a Project Coordinator and shall submit the name, address, and telephone number of the Project Coordinator to EPA for review and approval. Respondents' Project Coordinator shall be responsible for overseeing Respondents' implementation of this Amended Order. If Respondents wish to change their Project Coordinator, Respondents shall provide written notice to EPA, five (5) days prior to changing the Project Coordinator, of the name and qualifications of the new Project Coordinator. Respondents selection of a Project Coordinator shall be subject to EPA approval.

XIX. ACCESS TO SITE NOT OWNED BY RESPONDENT(S)

19.1 If the Site, the off-Site area that is to be

used for access, or other property subject to or affected by the clean up, is owned in whole or in part by parties other than those bound by this Amended Order, Respondents will obtain, or use their best efforts to obtain, Site access agreements from the present owner(s) within thirty (30) days of the effective date of this Amended Order. Such agreements shall provide access for EPA, its contractors and oversight officials, the state and its contractors, and Respondents or Respondents' authorized representatives and contractors, and such agreements shall specify that Respondents are not EPA's representative with respect to liability associated with Site activities. Copies of such agreements shall be provided to EPA prior to Respondents' initiation of field activities. If access agreements are not obtained within the time referenced above, Respondents shall immediately notify EPA of such failure and the efforts made to obtain access. Subject to the United States' non-reviewable prosecutorial discretion, EPA may use its legal authorities to seek to obtain access for the Respondents, may perform response actions with EPA contractors at the property in question, and may take enforcement action if Respondents have failed, without sufficient cause, to obtain access agreements. If EPA performs tasks or activities with contractors and does not terminate this Amended Order, Respondents shall perform all other activities not requiring access to that property. Respondents shall integrate the results of any such tasks undertaken by EPA into their

reports and deliverables.

19.2 Respondents shall save and hold harmless the United States and its officials, agents, employees, contractors, subcontractors, or representatives for or from any and all claims or causes of action or other costs incurred by the United States including but not limited to attorneys fees and other expenses of litigation and settlement arising from or on account of acts or omissions of Respondents, their officers, directors, employees, agents, contractors, subcontractors, and any persons acting on their behalf or under their control, in carrying out activities pursuant to this Amended Order, including any claims arising from any designation of Respondents as EPA's authorized representatives under section 104(e) of CERCLA, 42 U.S.C. § 9604(e).

XX. SITE ACCESS AND DATA/DOCUMENT AVAILABILITY

20.1 Respondents shall allow EPA and its authorized representatives and contractors to enter and freely move about all property at the Site and off-Site areas subject to or affected by the Work under this Amended Order or where documents required to be prepared or maintained by this Amended Order are located, for the purposes of inspecting conditions, activities, the results of activities, records, operating logs, and contracts related to the Site or Respondents and their representatives or contractors pursuant to this Amended Order; reviewing the progress of the Respondents in carrying out the

terms of this Amended Order; conducting tests as EPA or its authorized representatives or contractors deem necessary; using a camera, sound recording device or other documentary type equipment; and verifying the data submitted to EPA by Respondents. Respondents shall allow EPA and its authorized representatives to enter the Site, to inspect and copy all records, files, photographs, documents, sampling and monitoring data, and other writings related to Work undertaken in carrying out this Amended Order. Nothing herein shall be interpreted as limiting or affecting EPA's right of entry or inspection authority under Federal law.

20.2 Respondents may assert a claim of business confidentiality covering part or all of the information submitted to EPA pursuant to the terms of this Amended Order under 40 C.F.R. § 2.203, provided such claim is not inconsistent with section 104(e)(7) of CERCLA, 42 U.S.C. § 9604(e)(7), or other provisions of law. This claim shall be asserted in the manner described by 40 C.F.R. § 2.203(b) and substantiated by Respondents at the time the claim is made. Information determined to be confidential by EPA will be given the protection specified in 40 C.F.R. Part 2. If no such claim accompanies the information when it is submitted to EPA, it may be made available to the public by EPA or the state without further notice to the Respondents. Respondents shall not assert confidentiality claims with respect to any data related to Site conditions, sampling, or

monitoring. In the event that Respondents assert any confidentiality claim, Respondents shall provide EPA with an index of documents that Respondents claim contain confidential business information. The index shall contain, for each document, the date, author, addressee, and subject of the document.

XXI. RECORD PRESERVATION

21.1 Respondents shall provide to EPA upon request, copies of all documents and information within their possession and/or control or that of their contractors or agents relating to activities at the Site or to the implementation of this Amended Order, including but not limited to sampling, analysis, chain of custody records, manifests, trucking logs, receipts, reports, sample traffic routing, correspondence, or other documents or information related to the Work. Respondents shall also make available to EPA for purposes of investigation, information gathering, or testimony, their employees, agents, or representatives with knowledge of relevant facts concerning the performance of the Work.

21.2 Until ten (10) years after EPA provides written notice pursuant to paragraph 9.18, Respondents shall preserve and retain all records and documents in their possession or control, including the documents in the possession or control of their contractors and agents on and after the effective date of this Amended Order that relate in any manner to the Site. At

the conclusion of this document retention period, Respondents shall notify the United States at least ninety (90) calendar days prior to the destruction of any such records or documents, and upon request by the United States, Respondents shall deliver any such records or documents to EPA.

21.3 Until ten (10) years after EPA provides written notice pursuant to paragraph 9.20 of this Amended Order, Respondents shall preserve, and shall instruct their contractors and agents to preserve, all documents, records, and information of whatever kind, nature or description relating to the performance of the Work. Upon the conclusion of this document retention period, Respondents shall notify the United States at least ninety (90) days prior to the destruction of any such records, documents or information, and, upon request of the United States, Respondents shall deliver all such documents, records and information to EPA.

XXII. DELAY IN PERFORMANCE

22.1 Any delay in performance of this Amended Order that, in EPA's judgment, is not properly justified by Respondents under the terms of this Section shall be considered failure to comply with this Amended Order and failure to properly perform remedial action. Any delay in performance of any requirements under this Amended Order shall not affect Respondents' obligations to fully perform all obligations under the terms and conditions of this Amended Order.

this Amended Order. EPA's Costs Document Monitoring System (CDMS) or such other summary as certified by EPA, shall serve as basis for payment demands.

23.2 Respondents shall, within thirty (30) days of receipt of each EPA accounting, remit a certified or cashier's check for the amount of those costs. Interest shall accrue from the later of the date that payment of a specified amount is demanded in writing or the date of the expenditure. The interest rate is the rate established by the Department of the Interior pursuant to 31 U.S.C. § 3717 and 4 C.F.R. § 102.13.

23.3 Checks shall made payable to the Hazardous Substances Superfund and shall include the name of the Site, the Site identification number, the account number and the title of this Amended Order. Checks shall be forwarded to:

U.S. Environmental Protection Agency
Superfund Accounting
P.O. Box 360903M
Pittsburgh, Pennsylvania 15251

23.4 Respondents shall send copies of each transmittal letter and check to EPA's RPM.

XXIV. UNITED STATES NOT LIABLE

24.1 The United States, by issuance of this Amended Order, assumes no liability for any injuries or damages to persons or property resulting from acts or omissions by Respondents, or their directors, officers, employees, agents,

representatives, successors, assigns, contractors, or consultants in carrying out any action or activity pursuant to this Amended Order. Neither EPA nor the United States may be deemed to be a party to any contract entered into by Respondents or their directors, officers, employees, agents, successors, assigns, contractors, or consultants in carrying out any action or activity pursuant to this Amended Order.

XXV. ENFORCEMENT AND RESERVATIONS

25.1 EPA reserves the right to bring an action against Respondents under section 107 of CERCLA, 42 U.S.C. § 9607, for recovery of any response costs incurred by the United States related to this Amended Order and not reimbursed by Respondents. This reservation shall include but not be limited to past costs, direct costs, indirect costs, the costs of oversight, the costs of compiling the cost documentation to support oversight cost demand, as well as accrued interest as provided in section 107(a) of CERCLA, 42 U.S.C. § 9607(a).

25.2 Notwithstanding any other provision of this Amended Order, EPA may, at any time, perform studies, undertake or complete response actions (or any portion of response actions) as provided in CERCLA and the NCP, and seek reimbursement from Respondents for its costs, or seek any other appropriate relief.

25.3 Nothing in this Amended Order shall preclude EPA from taking any additional action, including modification of this Amended Order or issuance of new orders, and/or undertaking

remedial or removal actions or from requiring Respondents to perform additional actions pursuant to CERCLA or any other authority. Respondents shall be liable under section 107(a) of CERCLA, 42 U.S.C. § 9607(a), for the costs of any such actions undertaken by the United States for this Site.

25.4 Notwithstanding any provision of this Amended Order, the United States hereby retains all of its information gathering, inspection and enforcement authorities and rights under CERCLA, RCRA and any other applicable statutes or regulations.

25.5 Respondents shall be subject to civil penalties under section 106(b) of CERCLA, 42 U.S.C. § 9606(b), of not more than $25,000 for each day in which Respondents, without sufficient cause, willfully violate, or fail or refuse to comply with this Amended Order. In addition, failure to properly provide removal or remedial action in accordance with this Amended Order, or any portion hereof, without sufficient cause, may result in liability under section 107(c)(3) of CERCLA, 42 U.S.C. § 9607(c)(3), for punitive damages in an amount at least equal to, and not more than three times the amount of any costs incurred by the Fund as a result of such failure to take proper action.

25.6 Nothing in this Amended Order shall constitute or be construed as a release from any claim, cause of action or demand in law or equity against any person for any

liability it may have arising out of or relating in any way to the Site.

25.7 If a court issues an order that invalidates any provision of this Amended Order or finds that Respondents have sufficient cause to not comply with one or more provisions of this Amended Order, Respondents shall remain bound to comply with all provisions of this Amended Order not invalidated by the court's order.

XXVI. ADMINISTRATIVE RECORD

26.1 Upon request by EPA, Respondents shall submit to EPA all documents related to response actions at the Site for possible inclusion in the administrative record file.

XXVII. EFFECTIVE DATE AND COMPUTATION OF TIME

27.1 This Amended Order shall be effective ten (10) days from the date it is signed by EPA. Times for performance of all actions or activities shall be calculated from this effective date.

XXVIII. OPPORTUNITY TO CONFER

28.1 Respondents may, within ten (10) days after the date this Amended Order is signed, request a conference with EPA representatives to discuss this Amended Order.

28.2 The purpose and scope of the conference referenced in paragraph 28.1 above shall be limited to issues involving the implementation of the response actions required by

referenced in paragraph 28.1 above shall be limited to issues involving the implementation of the response actions required by this Amended Order and the extent to which Respondents intend to comply with this Amended Order. This conference is not an evidentiary hearing, and does not constitute a proceeding to challenge this Amended Order. It does not give Respondents a right to seek review of this Amended Order, or to seek resolution of potential liability, and no official stenographic record of the conference will be made. At any conference held pursuant to Respondents' request, Respondents may appear in person or by an attorney or other representative.

28.3 Requests for a conference in accordance with this Section must be made by telephone followed by written confirmation mailed that day to Ted Yackulic, Assistant Regional Counsel, U.S. EPA, Office of Regional Counsel, Mail Stop ORC-158, 1200 Sixth Avenue, Seattle, Washington, 98101, (206) 553-1218.

SO ORDERED, this 8th day of July, 1997.

BY: Randall F. Smith

RANDALL SMITH, Director
Region 10 Office of Environmental Cleanup
U.S. Environmental Protection Agency

ATTACHMENT A

AMENDED RECORD OF DECISION
DECISION SUMMARY, AND
RESPONSIVENESS SUMMARY

FOR

GOULD SUPERFUND SITE
SOILS OPERABLE UNIT
PORTLAND, OREGON

MAY 1997

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 SIXTH AVENUE
SEATTLE, WASHINGTON 98101

GOULD SUPERFUND SITE
SOILS OPERABLE UNIT
AMENDED RECORD OF DECISION

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Site

Gould Superfund Site, Soils Operable Unit
Portland, Multnomah County, Oregon

Statement of Basis and Purpose

This decision document presents the selected amended remedial action for the Soils Operable Unit at the Gould Superfund Site (Site). This Record of Decision (ROD) Amendment has been developed in accordance with the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), 42 U.S.C. Section 9601 et seq., and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300. The decision to amend the ROD is based on the administrative record for the Gould Site, which was updated April 25, 1997 to include additional information generated since the issuance of the ROD in 1988. The documents added to the administrative record since March 1988 are listed in Appendix C.

The State of Oregon concurs with the ROD Amendment.

Assessment of the Site

Actual or threatened releases of hazardous substances at the Gould Site, if not addressed by implementing the selected remedy documented in the ROD, as amended in this ROD Amendment, may present an imminent and substantial threat to human health, welfare, or the environment.

Description of the Amendment to the Remedy

This decision documents changes to several components of the selected remedial action for the Gould Site Soils Operable Unit. The ROD for this operable unit, signed on March 31, 1988, required treatment of contaminated battery casings to remove and recycle lead, and treatment of soil, sediment and matte to reduce the mobility of lead. This ROD Amendment allows treated and untreated contaminated material to be consolidated and contained in an on-site containment facility (OCF) on the Gould property.

The major components of the selected remedy include:

* Perform design studies to evaluate Site constraints and design parameters for, at least, consolidation and settlement, lateral and vertical support of the OCF, dewatering sediments, and the hydrogeologic impact of filling East Doane Lake remnant and the open excavation in the Lake Area (previously referred to as the Phase III Area) portion of the Rhone-Poulenc property;

* Construction of an OCF, which has a leachate collection system and allows for implementation of future Rhone-Poulenc cleanup actions, on the Gould property;

* Excavation and dewatering of East Doane Lake sediments contaminated above specified cleanup levels;

* Excavation of the remaining battery casings on the Gould property;

* Treatment (stabilization or fixation) of the lead fines stockpile (S-15), the screened Gould excavation stockpile (S-22); and other lead contaminated material identified as principal threat waste;

* Consolidating contaminated material, including sediments, treated and untreated stockpiled materials, casings, soil and debris in the lined and capped OCF;

* Filling the East Doane Lake remnant and the open excavation in the Lake Area of the Rhone-Poulenc property;

* Institutional controls, such as deed restrictions or environmental protection easements, which provide access to EPA for the purpose of evaluating the effectiveness of the remedial action, and which limit future use of properties within the Site to (1) industrial operations or other uses compatible with the protective level of cleanup achieved after implementation of the selected remedial action, (2) uses which do not damage the OCF cap and liner system or cause releases of buried materials;

* Performing groundwater monitoring to ensure the effectiveness of the cleanup and that contaminants were not mobilized during its implementation; and

* Long-term operation and maintenance requirements and reviews conducted no less often than every five (5) years to ensure the remedy continues to provide adequate protection of human health and the environment.

The selected remedy will also allow off-site disposal of contaminated materials from the Gould site at regulated Subtitle

D or Subtitle C disposal facilities. Off-site disposal may be necessary because of the uncertainty associated with final site quantities and design constraints. The selected remedy defers a cleanup decision on subsurface waste materials located on the Rhone-Poulenc and ESCO properties.

Declaration

Although this ROD Amendment changes several components of the remedy selected in the ROD, the remedy as amended continues to be protective of human health and the environment. The remedy as amended complies with Federal and State requirements that are legally applicable or relevant and appropriate to the remedial action and is cost effective. The remedy as amended continues to utilize permanent solutions to the extent practicable for this site. Significant quantities of hazardous substances have already been treated at this Site through partial implementation of the ROD. Treatment of the highly contaminated materials and treatment of materials classified as hazardous waste prior to their off-site disposal will be required; thus this remedy satisfies the statutory preference for treatment as a principal element.

Because this remedy will result in hazardous substances remaining on-site above health based levels, a review will be conducted within five (5) years after commencement of remedial action to ensure that the remedy continues to provide adequate protection of human health and the environment.

Chuck Clarke

Chuck Clarke
Regional Administrator, Region 10
U.S. Environmental Protection Agency

Decision Summary

for the Gould Site Soils Operable Unit
Amended Record of Decision

INTRODUCTION

Site Name, Location and Description

The Gould Superfund Site (Site) is located in northwest Portland, Oregon near N.W. 61st Avenue in the Doane Lake industrial area between N.W. St. Helens Road and N.W. Front Avenue. It includes property owned by Gould Electronics (approximately 9.2 acres) and portions of property owned by Rhone-Poulenc AG Company (Rhone-Poulenc or RPAC), Schnitzer Investment Corporation, ESCO Corporation, and Burlington Northern Railroad Company.

The Site is also adjacent to property owned by RPAC which was formerly used for the manufacture, formulation, and distribution of pesticide products. RPAC is conducting a Remedial Investigation and Feasibility Study of contamination associated with their property under a Consent Order with the Oregon Department of Environmental Quality (DEQ).

Lead and Support Agencies

The U.S. Environmental Protection Agency (EPA) is the lead agency with the Oregon DEQ the support agency for the Gould Superfund Site.

Statutory Citation for a Record of Decision (ROD) Amendment

Section 117(c) of CERCLA, 42 U.S.C. S9617(c), provides for addressing and documenting changes to the selected remedy after issuance of a ROD. This ROD Amendment documents the changes to the remedy set forth in the ROD. Since fundamental changes are being made to the remedy selected in the ROD, public participation and documentation procedures specified in the NCP, Section 300.435(c)(2)(ii) have been followed.

Date of ROD Signature

The ROD for the Gould Site Soils Operable Unit was signed March 31, 1988.

Need for the ROD Amendment

The remedial action selected in the ROD has been partially completed. The need for this ROD Amendment arose during remedial action as a result of technical concerns. EPA has since determined that the remedy selected in the ROD is no longer

appropriate for completing the cleanup based on operating experience and conditions at the Site.

Administrative Record

This ROD Amendment will become part of the administrative record for the Gould Site, as required by Section 300.823(a)(2) of the NCP, and will be available for public review at the information repositories listed below:

US EPA
Hazardous Waste Records Center, 7th Floor
1200 Sixth Avenue
Seattle, Washington 98101

Multnomah County Library
Central Library
801 SW Tenth Ave
Portland, Oregon 97204

SITE HISTORY

The Gould Site was listed on the National Priorities List (Superfund) in 1983 because of documented lead contamination. A secondary lead smelting facility was constructed on the current Gould property and began operations in 1949 under the ownership of Morris P. Kirk and Sons. Facility operations consisted of lead-acid battery recycling, lead smelting and refining, zinc alloying and casting, cable sweating, and lead oxide production. Discarded battery casings and other waste materials from the operations were disposed on the Gould property and adjacent properties. NL Industries purchased the property in 1971 and sold it to Gould in 1979. The facility was closed in 1981 and by the summer of 1982 most of the structures, facilities, and equipment had been removed.

The location of the Gould property and adjacent properties is shown on the attached Figure 1. A detailed description of the Site, including pre-1988 history, past waste disposal activities, Site characteristics, and enforcement history, is included in the 1988 ROD and administrative record.

Remedy Selected in the ROD

EPA signed a ROD in March, 1988 for the Soils Operable Unit of the Gould site. The selected remedy included:

* Excavation of all of the battery casing fragments and matte from the Gould property and adjacent properties where casings have been identified;

* A phased design program to determine the amount of material that can be recycled and to minimize the amount of material that must be RCRA landfilled;

* Separation of the battery casing components;

* Recycling of those components (or portions of components) that can be recycled, off-site disposal for non-recyclable components that fail the EP toxicity test, and on-site disposal of non-hazardous, non-recyclable components;

* Excavation, fixation/stabilization and on-site disposal of the remaining soil, sediment, and matte;

* Soil capping and revegetation;

* Isolation of surface water runoff to East Doane Lake by site regrading; and

* A monitoring program to determine changes in groundwater contamination over time and to ensure that remediation does not adversely impact air quality.

The selected alternative also included additional study of surface and groundwater in the area to help determine whether action needs to be taken to deal with the contamination beneath the Site.

Post ROD Site History

On February 29, 1988, EPA sent Special Notice letters to Gould and NL to negotiate remedial design/remedial action. On June 15, 1989, a Consent Decree to implement was entered into whereby NL agreed to perform predesign studies which evaluated the remedy selected in the ROD. The predesign studies, which included bench scale, pilot scale, and field demonstration testing, were completed in 1990. The studies evaluated several aspects of the cleanup remedy, including the ability of a proposed process to separate, clean and recycle the battery casing components. Following the review of the Predesign Report (January, 1991) EPA determined that the results met the criteria in the Record of Decision and the Consent Decree.

NL Industries agreed to complete the detailed design plans and specifications under a Consent Order with EPA. EPA approved the remedial design on September 30, 1991.

Special Notice Letters were sent on July 23, 1991, to 21 companies requesting that they provide good faith offers to undertake the cleanup of the site. EPA entered into a De Minimis settlement with six of the companies who were smaller

contributors to pollution at the Site. The U.S. District Court for the District of Oregon approved entry of the De Minimis settlement in February, 1993. Negotiations between the other companies and EPA did not result in a settlement.

EPA issued a Unilateral Administrative Order to seven Gould Site potentially responsible parties (Gould Site PRPs) on January 22, 1992, which required them to implement the selected remedial action at the Gould Superfund Site. The seven companies named include past and present owners, past operators of the facility, and major contributors of waste sent to the site. The Gould Site PRPs have performed the directed remedial action.

Remedial Action under the ROD.

Excavation and treatment of contaminated surface soils, surface piles of battery casings, buried battery casings, matte (smelter waste), and other debris began in the summer of 1993. Excavated battery casings were processed through a battery treatment plant designed to separate materials (lead fines, metallic lead, clean plastic, and clean ebonite) for recycling. Contaminated soil and matte were stabilized and stored for backfill on the Site. Site operations included perimeter air monitoring and monthly groundwater monitoring at select wells on the Gould property.

In May, 1994, EPA, pursuant to the Unilateral Order, directed the Gould Site PRPs to evaluate alternative remedial actions and conduct test studies in order to improve efficiency and reliability at the Site. After this, work on the battery recycling process was limited to cleaning plastic for recycling while stabilization of other waste materials continued.

The Gould Site PRPs prepared a focused feasibility study (FFS) in response to the revised Unilateral Order. The FFS evaluated the treatment process and other potential treatment alternatives, including off-site disposal of waste materials. Following the submittal of the FFS, EPA determined that additional information and evaluation of organic contamination was necessary.

Most of the cleanup activity at the Gould site has been suspended pending an EPA determination on changes to the remedy previously selected in the ROD. Prior to suspension, an estimated 24,000 tons of contaminated battery casings were treated. Approximately 244 tons of plastic and 88 tons of coarse lead were recycled for reuse off-site. An estimated 20,000 blocks (1 cubic yard (cy) each) of stabilized material from contaminated soil, matte and debris)were produced. Several hundred tons of debris have been shipped off-site for disposal. The FFS estimated that 68,000 cy of untreated contaminated materials remain on-site. Of this amount, approximately 15,000 cy of contaminated material that has already been excavated is stockpiled on-site. Figure 2 shows the

lead impacted areas and locations of the stockpiles and stabilized blocks.

SCOPE AND ROLE OF OPERABLE UNIT REMEDIAL ACTION

The ROD issued in 1988 was for the Soils Operable Unit of the Gould Site. The Soils Operable Unit addresses lead contaminated battery casings, soil, sediment, debris, and other smelter waste at the Site. Lead contamination was the principal threat addressed in the ROD and is the primary contaminant of concern addressed in this ROD Amendment. A comprehensive discussion of the selected remedial action is included in the March 31, 1988 ROD.

The ROD stated that insufficient hydrogeologic information was available to make a decision on the groundwater unit. In order to gather additional information on groundwater contamination, EPA sent CERCLA 104(e), 92 USC §9604, information request letters to property owners in the Doane Lake area. After the ROD for the Soils Operable Unit was issued several industries in the area formed the Doane Lake Industrial Group (DLIG) and agreed to undertake an hydrogeologic investigation under a Consent Order with DEQ in 1990. A final report, *Hydrogeologic Investigation of the Doane Lake Area*, was submitted to DEQ in 1991. DEQ subsequently decided to focus on individual sites in the area rather than continue to pursue area wide studies with the industry group. The DLIG report data indicated that Rhone-Poulenc is a potential source of organic contamination in groundwater. DEQ is currently providing oversight of a remedial investigation and feasibility study, under an Order on Consent, at the RPAC site, adjacent to the Gould Site.

Additional groundwater and surface water investigations have been conducted as part of the remedial action and post-ROD investigation of the Site. Recent data from sampling of groundwater monitoring wells located on- and off-Site have not shown significant lead contamination. However, EPA does not anticipate making a determination on whether groundwater cleanup will be required until construction activities implemented in accordance with this ROD Amendment have been completed and groundwater quality has been monitored and evaluated. Groundwater monitoring will be conducted to determine the effectiveness of the lead-contaminated soil cleanup and to ensure that no contaminants were mobilized during implementation of the selected remedy.

SUMMARY OF SITE CHARACTERISTICS

A detailed description of the nature and extent of Site contamination is included in the administrative record for the ROD. Since the ROD was issued, significant additional information has been obtained regarding Site contamination.

Canonie Site Investigations

Canonie Environmental (Canonie), contractor for the Gould Site PRPs, performed a limited investigation of groundwater and soils in 1993 to estimate the risk to site workers from exposure to organic compounds and to identify potential production issues. Classes of compounds detected that could present a health risk to workers upon exposure included volatile organics, chlorinated herbicides, dioxins and furans, and phenols. Individual constituent concentrations in soil/fill and sediments were generally less than 1 mg/kg (less than 0.175 ug/kg for 2,3,7,8-TCDD). Based on a comparison of detected concentrations with personnel exposure standards, the risk of exposure to workers was estimated to be low. Canonie used a combination of engineering controls, safe work practices, and personal protective equipment to minimize worker exposure during remediation.

Canonie also determined that the organics in the excavated material would not affect the ability of the battery waste treatment plant to produce materials for recycle or the ability of the stabilization plant to generate stable materials for on-site disposal.

Canonie conducted additional site investigations in 1994 to develop a better estimate of the quantities of the various waste materials present at the site and delineate the extent of buried casings and matte. There were discrepancies between quantities of materials estimated in the ROD with those encountered during cleanup. The investigation determined that quantities of battery casings on the Gould property were significantly overestimated (54,100 cy ROD estimate vs 9,700 cy revised estimate). A summary of the ROD estimates and revised estimates is shown in Table 1. Table 1 also shows the estimated quantities that would be placed in the OCF and quantities that would be left in place under the ROD Amendment. Based on the revised estimates about 90 percent of the casings on the Gould property have already been excavated and treated.

Sampling and Analysis for Organic Constituents

Organic chemicals of concern have been encountered during a number of investigations of the Gould Site and surrounding areas. The source of the organic contamination at the Gould site is believed to be the former Rhone-Poulenc facility that was located

adjacent to the Gould Site. Because of the presence of organic contamination in the Gould Site Soils Operable Unit, additional site investigation has been conducted by the Gould Site PRPs and Rhone-Poulenc.

The information regarding organic contamination in surface and groundwater developed in earlier investigations (including the 1993 Canonie investigation) was reviewed and summarized in the *Review of Organics Data Collected at the Gould Superfund Site* (ENVIRON 1994). Groundwater samples collected at the Site from wells and temporary well points on Rhone-Poulenc property have had the following types of organic compounds reported: phenols, herbicides, dioxins, and furans. Organic compounds detected in surface water samples from the open excavation on the Lake Area portion of the Rhone-Poulenc property include 1,2-dichlorobenzene; 2,4-D; 2,4,5-T; 2,4,5-TP (Silvex); xylenes; dioxins and furans.

The highest concentrations of organics are associated with NAPLs, which have been found at depth below the RPAC former manufacturing plant property and the adjoining southwest corner of the Gould property. There have also been indications that NAPL may be present in the Lake Area (formerly referred to as the RPAC Phase III area).

Additional information regarding organic chemicals in East Doane Lake sediments, stockpiled material, and stabilized blocks was collected and presented in the *Amended Remedy Document* (ENVIRON 1996). In general, the highest concentrations of organics in the East Doane Lake sediments are in the shallow zone (upper 2 ft). The shallow sediments also contain lead levels that exceed the RCRA hazardous waste characteristic of EP toxicity, the cleanup level set in the ROD. The levels of organics reported do not appear to have had a significant adverse impact on lead stabilization.

Surface water from the East Doane Lake remnant was sampled in July 1995 by the Gould Site PRP Group. Chemicals detected in the water sample included metals (cadmium, chromium, lead, and zinc); petroleum hydrocarbons; herbicides (2,4-D, 2,4,5-T, and 2,4,5-TP); and furans.

Rhone-Poulenc Investigation

Rhone-Poulenc is conducting a Remedial Investigation/Feasibility Study (RI/FS) of soils and groundwater contamination. The RPAC RI/FS is investigating contamination of a large area which includes properties within the Gould Site. The RPAC RI/FS is being conducted under a Consent Order with DEQ pursuant to State authority. A substantial portion of the area to be remediated

for lead under the 1988 ROD is located in the Lake Area portion of the Rhone-Poulenc property.

Sediment Sampling and Investigation

Sediment samples in the East Doane Lake remnant were collected in 1994 at 16 locations. The samples were analyzed for total and leachable lead to estimate the volume of sediment to be remediated for lead. Additional samples were collected in 1995 at the same locations and were analyzed for organic constituents, including organochlorine insecticides, PCBs, and dioxins and furans. The frequency of detections and concentrations of organic compounds generally decreased with depth.

RPAC is conducting an evaluation of organic contamination in East Doane Lake sediments. Because the 1.5 to 2.0 feet of sediment fails RCRA EP Toxicity criteria for lead, the RPAC evaluation assumes those sediments will be removed and placed in the OCF as part of the remedial action under the Gould Site Amended ROD. The RPAC evaluation is being conducted as an Interim Remedial Measure under the RPAC RI/FS Consent Order. Results from this evaluation should be available prior to completing the final design of the remedy in this ROD Amendment. The RPAC evaluation will assess the impacts of organic contamination in the sediments on downgradient current and reasonably likely beneficial use of groundwater. If remedial action for the sediments below the anticipated 1.5 to 2.0 foot excavation depth under the Gould Site Amended ROD is deemed warranted by DEQ, the work will be conducted as a time-critical action under State authority. EPA and DEQ intend that additional excavation would occur during the Gould Site excavation to avoid unnecessary delay in the implementation of the amended remedy at the Gould Site. EPA and DEQ will consider allowing disposal of additional sediments in the OCF.

Amended Remedy Document

The Gould Site PRPs submitted a proposed alternative cleanup plan to EPA in October 1995. The proposed alternative which the PRPs submitted for EPA consideration was included in the *Amended Remedy Document* (ARD).

The proposed remedy called for consolidating the stockpiled contaminated soil, debris, and stabilized blocks within the area of contamination, and placing them in an OCF that includes a leachate collection system. The Gould Site PRPs proposed that the OCF be located on Gould property. The proposal also required that the East Doane Lake remnant be dredged and filled with clean fill, and that the excavated sediments be dewatered before placement in the OCF.

The proposal included a conceptual design of the OCF. EPA and DEQ identified several issues related to the proposal, including those listed below.

1) The design needs to provide for adequate control of water during the filling of the East Doane Lake remnant, and monitoring and control of potential impacts from displacement of contaminants in East Doane Lake water and sediments.

2) The OCF must be designed to accommodate implementation of future RPAC groundwater cleanup actions. This may reduce the area on the Gould property available for the OCF.

3) The OCF must be designed to provide control of stormwater runoff and leachate.

Wetlands Investigation and Evaluation

An evaluation of the potential impacts associated with the proposed dredging and filling of the East Doane Lake remnant was performed by the Gould Site PRPs. The report, entitled the *Wetlands Investigation of East Doane Lake* (Woodward Clyde, April 1996), classified East Doane Lake as non-wetland "open water" which has a well-defined bank and ordinary high water mark. A total of only 0.04 acre (1670 square feet) was considered wetlands. Wetland areas identified in the 1996 study are shown in Figure 3.

The East Doane Lake remnant is approximately 3.1 acres in size and located on the Gould and Schnitzer properties. It is the remnant of a larger water body that has been gradually filled as a result of industrial development and waste disposal activities, which includes the disposal of smelter and battery waste generated by the former operations on the Gould property.

EPA has reviewed the proposed action for compliance with the requirements of the Clean Water Act Section 404(b)(1) Guidelines. The Guidelines provide flexibility to adjust the stringency of the review for projects that would have only minor impacts. Minor impacts are associated with activities that generally would have little potential to degrade the aquatic environment and include projects that are located in aquatic resources of limited natural function and projects that are small in size and have little direct impact.

The East Doane Lake remnant is already impacted by existing chemical contamination, and is considered an aquatic resource of very limited natural function. Significant adverse impacts to the aquatic environment are already occurring at the site. East Doane Lake has been used for industrial waste discharge from the lead smelting facility formerly located on the Gould property, an

acetylene gas production facility formerly located on the Schnitzer site, and the herbicide production facility formerly located on the Rhone-Poulenc site. Remediation of the contaminated portions of the Gould Site Soils Operable Unit are expected to reduce or eliminate exposure to contaminated sediments and possible uptake of contaminants from the sediments into the aquatic environment.

The dredging of East Doane Lake was a component of the original remedy and is anticipated to have minor adverse impacts because of the limited and degraded nature of the aquatic ecosystem and organisms. Filling of East Doane Lake remnant with clean imported fill will eliminate the East Doane Lake aquatic ecosystem. Existing biological communities in the East Doane Lake remnant are considered to be degraded due to physical and chemical intrusions.

EPA has concluded that the 1988 ROD remedy is not a practicable alternative for completing the cleanup of the Gould site. Other alternatives evaluated in the 1994 FFS included: on-site stabilization with a combination of on-site and off-site disposal, on-site stabilization with on-site disposal of all stabilized material, on-site stabilization with off-site disposal, and off-site stabilization with off-site disposal.

The on-site disposal options included filling portions of the East Doane Lake remnant and/or constructing a disposal facility that would preclude reasonable future use of the property. Off-site disposal may be a viable option that could require additional treatment of significant quantities of the waste for organic constituents in addition to treatment for lead to meet RCRA land disposal restrictions. The alternatives were not considered to have significantly less impact on the aquatic ecosystem or the environment as compared to the proposed remedy to offset the increased costs and loss of reasonable future use of the property. Off-site disposal of some site materials would be allowed as a component of the proposed amended remedy.

EPA has further determined there is a greater net environmental benefit to be gained from protecting and/or enhancing a nearby off-site area with more suitable habitat potential than by selecting a remedial action that would protect an unsuitable habitat.

A mitigation/restoration plan will be required to compensate for the loss of the wetlands and open water habitat as part of the remedial action.

Proposed Plan

EPA issued a proposed plan for public comment that described EPA's preferred alternative for completing the cleanup of the Soils Operable Unit on April 1, 1996. The proposed alternative in the plan was based on the PRP proposal described in the ARD. The thirty day comment period on the plan was extended an additional thirty days at the request of one commentor.

Reasons for Issuing ROD Amendment

1) The battery casings treatment process is not an efficient or cost effective method of completing the site cleanup.

For several months the battery plant separated and treated contaminated casings excavated from the Site. However, this process was limited by operating problems. It was difficult to process the highly variable waste feed and produce consistent results in spite of making numerous modifications to improve the process. Battery casing fragments from the RPAC and ESCO properties are mixed with wood chips and other porous material that could not be cleaned effectively or separated from the ebonite and plastic. As a result, both the plastic and ebonite output from the plant often failed the EP Toxicity and TCLP tests for lead and had to be reprocessed. A detailed description of the operation of the battery plant is included in the FFS.

Estimated costs to complete the project using the battery processing plant increased substantially since the start of cleanup. The cost of the cleanup was estimated at the end of remedial design to be approximately $20 million. Revised estimates based on operating experience and updated information on waste quantities and characteristics were $40 to $56 million.

2) Only limited quantities of processed materials were recyclable, and most of the remaining waste is not recyclable

The battery plant produced coarse metallic lead (88 tons) and plastic (255 tons) products for recycle. The ebonite and lead fines products have not been recycled. Most of the remaining battery casings on the Site are located on the RPAC property, and significant quantities of coarse lead have not been recovered from this area. Most of the remaining untreated casing fragments on the Site are composed of ebonite. There is essentially no demand for the ebonite product and the ebonite treated to date is stockpiled on the Site. The lead fines product was much lower in concentration than was anticipated, and was not recyclable. The lead fines are also stockpiled on the Site.

3) Volume and nature of waste materials were different from RI estimates.

The results of additional investigation show that the amount of battery casings on the Gould property was overestimated in the ROD, and that most of the remaining subsurface material on the Gould property is matte, slag and debris (see Table 1). Post-ROD investigation and monitoring also indicate that stabilization to reduce the mobility of this material will be of questionable benefit because there is little evidence that lead associated with the subsurface matte material is mobile or has had a significant impact on area groundwater. There is also evidence that lead contaminated material is also contaminated with organics (presumably from the former RPAC facility).

4) Cleanup activities need to be coordinated with the RPAC RI/FS.

Approximately 10,215 cubic yards of casings have been excavated and treated from the Lake Area of the RPAC property portion of the Gould Site. The remaining casings, an estimated 17,500 cubic yards, are beneath several feet of other fill material and generally below the water table. Further subsurface excavation in these areas may adversely affect the migration of RPAC organic contaminants. RPAC is currently investigating this area under the Consent Order with the DEQ. DEQ and EPA agree that the remaining battery casings in the Lake Area should not be excavated until completion of the RPAC RI/FS. EPA will coordinate future cleanup determinations and remedial actions located on this portion of the Site with DEQ.

COMPARISON WITH THE NINE CERCLA EVALUATION CRITERIA

The proposed amended remedy includes excavation of the remaining battery casings on the Gould and Schnitzer properties portions, dredging and de-watering lead-contaminated sediments from East Doane Lake; containment of sediments, stockpiled materials (including previously treated materials), shallow soils, and debris in a lined and capped OCF located on the Gould property. The proposed OCF would cover most of the Gould property, approximately 8.5 acres, including the area now within East Doane Lake.

The NCP establishes nine criteria for evaluating remedial action alternatives. A discussion of the original remedy and amended remedy relative to the nine criteria is required by CERCLA. This section discusses the proposed changes to the existing remedy.

Overall protection of human health and the environment. This criterion addresses whether a remedial alternative protects human health and the environment. Protection is determined by assessing whether the risks associated with each exposure pathway (i.e., ingestion of soil, ingestion of groundwater) are eliminated, reduced, or controlled through treatment and engineering or institutional controls.

The potential critical pathways for lead identified in the endangerment assessment portion of the ROD were airborne exposure from on-site fugitive dust emissions, incidental oral ingestion of contaminated battery casings, matte and soil, and dermal contact and incidental ingestion of lead from surface water in the East Doane Lake remnant. The remedy in the ROD relied on treatment and recycling to reduce exposures. Contaminated material treated by stabilization would be backfilled on the Site.

The ROD Amendment still addresses lead as the primary contaminant of concern and provides additional protection for organic chemicals that are commingled with waste materials to be placed in the OCF. Routes of potential exposure to the materials placed in the OCF are eliminated by the liner and cap. The OCF will have a leachate collection system which will further protect groundwater quality.

Subsurface battery casings located on the RPAC and ESCO properties will not be excavated pursuant to this Amended ROD. The subsurface casings are located beneath several feet of other fill material and generally below the water table. The primary exposure pathway associated with the subsurface battery casing materials on this portion of the Site is groundwater, and there are concerns that continued excavation (especially in the southern portion of the Lake Area) could adversely affect the migration of organic contamination that is currently being characterized as part of the RPAC RI/FS.

Air monitoring conducted at the Site during past excavation has not detected levels of airborne contamination that constitute an unacceptable risk to human health and the environment.

Compliance with ARARs. The selected remedial action must comply with identified substantive applicable requirements under federal and state laws. The selected remedial action must also comply with laws and regulations that are not directly applicable but do pertain to situations sufficiently similar to those encountered at the Site, so that use of the requirements is well suited to the Site cleanup. These are known as relevant and appropriate requirements. Evaluation of remedial alternatives with chemical-, location-, and action-specific ARARs is necessary for determining compliance.

Both the ROD alternative and ROD Amendment alternative comply with ARARs. The ROD Amendment alternative will comply with federal and state ARARs by providing specific design and operating conditions that are developed to comply with specific requirements of these ARARs.

Long-term effectiveness and permanence. This criterion evaluates the ability of a remedial alternative to maintain reliable protection of human health and the environment once remediation goals have been achieved. The magnitude of the residual risk is considered as well as the adequacy and reliability of controls.

The ROD relied on treatment of lead contaminated materials to address health and environmental hazards. It was anticipated that removal and successful separation of the battery casing fragments would substantially reduce sources of pollution at the Site, and contamination in all media would decrease. Residual risk remaining after remediation would have been primarily posed by unremediated surface soils, groundwater and surface water. The ROD also assumed that backfilling the treated material on the Site without additional containment would be an effective long-term solution.

Under the ROD Amendment, the OCF will be designed, constructed, and monitored to ensure long-term effectiveness and permanence. Direct contact will be eliminated because the wastes will have been contained and/or capped, and the risk of leaching to ground water will be greatly reduced by the liner and leachate collection system. The liner and cap system will provide greater protection from organic contamination that is commingled with the lead contaminated waste than the remedy in the ROD. Further, containment of the contaminated wastes in the OCF reduces the potential for exposure to lead contamination from treated materials that could be affected by weathering or other factors if backfilled directly on the Site.

Long-term effectiveness under the ROD and the ROD Amendment is also dependent on assuming future land use is limited to approved industrial or other appropriate activities.

Reduction of toxicity, mobility or volume through treatment. This criterion addresses the statutory preference for selecting remedial actions that use treatment technologies that permanently reduce the toxicity, mobility or volume of the hazardous substances.

The treatment required in the original ROD remedy included waste separation and recycling of lead, plastic, and ebonite, and stabilization to reduce the mobility of lead. Stabilization reduces mobility but does not reduce the toxicity or volume of

waste material. Significant quantities of lead contaminated material have been treated as part of the remedial action that was partially implemented at the site. Approximately 20,000 cubic yards of waste have been stabilized to inhibit the migration of lead. A substantial portion of the principal threat lead waste has already been treated.

The ROD Amendment uses a combination of treatment and containment to reduce the mobility of lead. Lead remaining in the various waste materials does not appear to be highly mobile in groundwater. The aboveground, lined and capped OCF minimizes the low level threat of lead associated with potential leaching to groundwater. In addition, the threat of potential direct contact is limited by the containment and capping. Principal threat waste material will be treated prior to placement in the OCF to limit the potential release of the highly contaminated material in the unlikely event of a release from OCF.

Short-term effectiveness. This criterion refers to the period of time needed to achieve protection, and any adverse impacts on human health and the environment, specifically site workers and community residents, that may be posed during the construction and implementation period until cleanup goals are achieved.

Short term impacts for the amended remedy are similar to those identified in the remedy under the ROD. The potential short term community risk is inhalation of airborne dust during movement of the impacted materials. Site ambient air monitoring conducted during excavation and treatment activities indicates airborne contaminant concentrations of concern can be controlled to prevent levels that pose unacceptable risk. Typical personal protective measures will be taken to protect workers from airborne and dermal contact with contaminants.

Short term impacts associated with the dredging of East Doane Lake remnant, including increased concentrations of dissolved and suspended contaminants, were identified in the original remedy. The filling of the East Doane Lake remnant must occur at a rate that allows for gradual dissipation of displaced water. In addition, the use of temporary plastic covers for waste placed in the OCF will minimize potential exposures prior to final capping.

Implementability. This criterion refers to the technical and administrative feasibility of a remedial alternative, including the availability of goods and services needed to implement the selected remedy.

The treatment and recycle remedy selected in the ROD was partially implemented at the Gould site. Implementation of the remedy was difficult and cost estimates for completing the remedy

increased substantially. Although some phases of the cleanup were successful, continued operation of the treatment process was not a practical alternative for completion of the Gould site remedial action.

The excavation and construction of the OCF can be implemented using established engineering and construction techniques. A detailed design phase will be required, however, to ensure that construction and operation of the OCF will be adequately protective. The design will include special considerations for dredging and filling of the East Doane Lake remnant and handling of site materials. The services and materials to be utilized are readily available (e.g., import of fill materials, construction of liners, and placement of an asphalt cap).

Cost. Evaluation of project costs requires an estimation of the net present value of capital costs and O&M costs. The costs presented below (and in the 1996 ARD) are estimates. Actual costs could vary based on the final design and detailed cost itemization.

The total cost associated with the original remedy as estimated in the ROD was approximately $20.5 million, including capital cost of about $3.5 million and O&M cost of about $17 million (present worth). The estimated construction cost to date was estimated in the ARD at approximately $16.5 to $20.7 million, depending on adjustments for plant equipment amortization and contractor retentions. The cost associated with completing the remedy, with some modifications to optimize some process operations, was estimated at approximately $40.8 million.

The total estimated cost associated with the ROD Amendment remedy was estimated in the ARD at $10.5 million, including capital cost of about $10.1 million and O&M cost of about $400,000 (present worth). Additional costs associated with treatment and East Doane Lake mitigation could increase the capital cost an estimated $1.5 to $2 million.

State acceptance. DEQ has been actively involved with the development and review of the ARD, the Proposed Plan, and this ROD Amendment. The State of Oregon concurred with the 1988 selected remedy and concurs with this ROD Amendment. A letter of concurrence is included as Appendix B.

Community acceptance. The Proposed Plan was released to the public on March 31, 1996. EPA provided a thirty day public comment period to accept comments on the proposed amendment. A notice of availability of the Proposed Plan and the administrative record was published in the Oregonian on March 28, 1996. The comment period began on April 1, 1996 and was extended an additional thirty days at the request of one commentor. EPA

received one letter with several comments during the extended public comment period for this ROD Amendment. The Responsiveness Summary provides EPA responses to the specific comments.

DESCRIPTION OF THE SELECTED REMEDY

Based upon a consideration of the requirements of CERCLA, the comparative analysis of alternatives, and consideration of public comments, both EPA and DEQ have determined that the proposed amended remedy is the most appropriate remedy for completing the cleanup of the Gould Site Soils Operable Unit.

The major components of the selected remedy include:

* Perform design studies to evaluate site constraints and design parameters, including the following: consolidation and settlement, lateral and vertical support, dewatering sediments, stormwater runoff and control, leachate collection, treatment and disposal, and hydrogeologic impact of filling East Doane Lake remnant and the open excavation (also known as the Lake Area or Phase III Area) portion of the Rhone-Poulenc property;

* Construction of an OCF on the Gould property, which has a leachate collection system and allows for implementation of future Rhone-Poulenc cleanup actions;

* Treatment (stabilization or fixation) of the lead fines stockpile (S-15) and the screened Gould excavation stockpile (S-22), and other lead contaminated material identified as principal threat waste;

* Excavation and dewatering of EDLR sediments contaminated above specified cleanup levels;

* Excavation of the remaining battery casings on the Gould property;

* Consolidating contaminated material, including sediments, treated and untreated stockpiled materials, casings, soil and debris in the lined and capped OCF;

* Filling the East Doane Lake remnant and the open excavation on the Lake Area portion of the Rhone-Poulenc property with clean fill material;

* Mitigation/restoration to compensate for the loss of East Doane Lake wetland and open water habitat. A proposal identifying work to be performed, including at least one

off-site mitigation proposal, shall be submitted with the final design report;

* Institutional controls, such as deed restrictions or environmental protection easements, which provide access to EPA for the purpose of evaluating the effectiveness of the remedial action, and which limit future use of properties within the Site to (1) industrial operations or other uses compatible with the protective level of cleanup achieved after implementation of the selected remedial action, (2) uses which do not damage the OCF cap and liner system or cause releases of buried materials;

* Performing groundwater monitoring to ensure the effectiveness of the cleanup and that contaminants were not mobilized during its implementation; and

* Long-term operation and maintenance, including but not limited to, cap maintenance, leachate collection and treatment, stormwater runoff control, and reviews conducted no less often than every five (5) years to ensure the remedy continues to provide adequate protection of human health and the environment.

Design requirements described elsewhere in this document are also considered part of the selected remedy. A summary of design requirements referenced in this document is attached in Appendix D.

The selected remedy will also allow off-site disposal of contaminated materials from the Gould site at regulated Subtitle D or Subtitle C disposal facilities. Off-site disposal may be necessary because of the uncertainty associated with final site quantities and design constraints. The selected remedy defers a cleanup decision on subsurface waste materials located on the Rhone-Poulenc and ESCO properties.

Comparison of ROD with the ROD Amendment

The following lists each of the elements from the existing ROD, followed by a brief description of the actions that have been completed or partially completed to date, and a comparison with the corresponding element in the ROD Amendment.

* ROD - Excavation of all of the battery casing fragments and matte from the Gould property and adjacent properties where casings have been identified;

  Status - Partially completed. An estimated 24,500 tons of battery casings have been excavated and treated as part of the remedial action under the ROD. This represents about

56% of the estimated total. Approximately 18,500 tons of battery casings remain; 900 tons on the Gould property and 17,500 tons on the Rhone-Poulenc and ESCO properties.

ROD Amendment - Excavation of remaining battery casing fragments (900 tons) from the Gould property. Excavation of remaining matte from the Gould property located above the water table only. The decision on whether to excavate the 17,500 tons of casing fragments on the Rhone-Poulenc/ESCO properties will be deferred until completion of the Rhone-Poulenc RI/FS. As previously described, the casings on the Rhone-Poulenc/ESCO properties are located beneath several feet of fill.

* ROD - A phased design program to determine the amount of material that can be recycled and to minimize the amount of material that must be RCRA landfilled;

  Status - Completed

* ROD - Separation of the battery casing components;

  Status - Partially completed (see quantity estimates above).
  ROD Amendment - consolidate remaining battery casings from the Gould property in the OCF.

* ROD - Recycling of those components (or portions of components) that can be recycled, off-site disposal for non-recyclable components that fail the EP toxicity test, and on-site disposal of non-hazardous, non-recyclable components;

  Status - Recycling of components that can be recycled has been completed. The following components were recovered from the battery treatment process: 1) coarse lead, 2) fine lead, 3) plastic battery casing fragments, and 4) ebonite battery casing fragments. The coarse lead (88 tons) and plastic battery casing fragments (244 tons) were recycled. There was no market for the treated ebonite battery casing fragments. An estimated 7,500 tons is stockpiled on-site. The fine lead product was lower in concentration than anticipated for recycling (8 to 12% actual vs 40% design). An estimated 2,600 tons of lead fines is stockpiled on-site.

  ROD Amendment - Further recycling is not an objective of the ROD Amendment.

* ROD - Excavation, fixation/stabilization and on-site disposal of the remaining soil, sediment, and matte;

Status - An estimated 20,000 blocks (approximately one cubic yard each) of stabilized soil, matte and debris have been produced and stockpiled on-site. An estimated 22,400 cy of matte, slag and debris remains on the Gould site and 18,300 cy of contaminated overburden, fill and subsoils remain on the Rhone-Poulenc/ESCO properties.

ROD Amendment - Stabilized blocks and other contaminated material, including sediments, soil and matte located above the water table on the Gould property, will be consolidated in the OCF. Waste material greater than 40,000 mg/kg lead will be treated by stabilization or fixation prior to placement in the OCF. Surface soil contaminated above the 1000 mg/kg lead cleanup level on the Rhone-Poulenc and ESCO properties will be consolidated in the OCF. The other contaminated material located on the Lake Area portion of the Rhone-Poulenc property and the ESCO property will be addressed as described below.

* ROD - Soil capping and revegetation;

Status - excavated areas have not been capped

ROD Amendment - The OCF will be located on the Gould property and will have a multi-media cap covered by asphalt. EPA has determined, in consultation with DEQ, that a final decision on the need for a soil cap or other remediation of lead contamination in the Lake Area portion of the Rhone-Poulenc property and the ESCO property should be deferred until after the following actions have been completed: 1) removal of treated and untreated Gould Site waste material currently stockpiled on the Rhone-Poulenc property, 2) surface soil removal and confirmation sampling, and 3) completion of a risk assessment for organic contamination in soil in the Lake Area.

* ROD - Isolation of surface water runoff to East Doane Lake by site regrading;

Status - Not completed

ROD Amendment - After completing the removal of lead contaminated sediments, the East Doane Lake remnant will be filled with clean fill. Surface water runoff from the OCF will be collected for discharge via storm drains.

* ROD - A monitoring program to determine changes in groundwater contamination over time and to ensure that remediation does not adversely impact air quality.

Status - Ongoing

ROD Amendment - Air and groundwater monitoring will be conducted as part of the remedy.

Description of Changes to the Remedy

Several elements of the amended remedy are fundamental changes from the remedy described in the ROD. The major changes to the remedy are described below:

1) The contaminated materials that are stockpiled on-site and additional contaminated material to be excavated will not be treated in the battery treatment/recycle plant. The treatment/recycle plant has been decontaminated and disassembled. Instead, these contaminated materials will be consolidated, after treatment by stabilization or fixation of principle threat material (contaminated material above 40,000 mg/kg lead), in an OCF which will be constructed on the Gould property. The OCF will provide additional protection from organic contamination that is commingled with lead waste by eliminating pathways of exposure. The OCF will be designed to meet minimum technology requirements for RCRA Subtitle C landfills, including liners, leachate collection, and a cap. The RCRA Subtitle C cap will reduce direct contact/ingestion threat, air emissions and infiltration of water through the waste material. The liner will provide additional protection against leaching and as a barrier which further protects groundwater.

2) The lead fines stockpile (S-15) will not be recycled but will be treated by stabilization or fixation to meet RCRA land disposal restriction treatment standards and reduce the leaching potential of this material. The lead fines will be placed in the OCF after treatment. In addition, the screened excavation stockpile (S-22), which is considered principal threat material because of the high level of lead contamination (55,000 ppm lead), will be treated prior to placement in the OCF. Because the liners and cap provided with the OCF are as protective as treatment for non-principal threat lead waste, lower levels of lead contaminated material will not be treated.

3) Excavation of matte (a smelter waste material that was deposited on the Gould property) will be limited to material above the water table. Excavation of subsurface matte and debris below the water table will not be required under the ROD Amendment. Groundwater monitoring will be conducted to ensure that these remaining materials below the water table are not impacting groundwater.

4) Excavation of subsurface soil and the remaining battery casings on the Rhone-Poulenc and ESCO property portions of the Site will not be included in the remedy at this time. EPA will

reassess the need for further remedial action for subsurface soils and other waste materials after the stockpiled materials currently located on the property have been moved to the OCF and a risk assessment for the organic constituents has been completed as part of the Rhone-Poulenc RI/FS. EPA may, later, determine that disposal of subsurface materials or other waste materials from the Rhone-Poulenc and ESCO properties in the OCF is appropriate.

5) The East Doane Lake remnant will be filled to provide additional surface area for construction of the OCF, and to eliminate surface water pathways of exposure in this area.

The selected remedy includes excavation of the remaining battery casings on the Gould and Schnitzer property portions of the Site, dredging and de-watering of lead-contaminated sediments from the East Doane Lake remnant (EDLR); containment of sediments, stockpiled materials, including previously treated materials, shallow soils, and debris in a lined and capped on-site containment facility to be located on the Gould property. The proposed OCF will cover approximately 8.5 acres, most of the Gould property, including the area now within the EDLR. Potential future industrial uses of the Gould property will be considered in the design of the facility to the extent practicable.

When completed, the OCF is expected to contain approximately 60,000 cy of contaminated waste material, sediment, soil, and debris. The OCF will have a total thickness of approximately eight feet, including bottom liner, waste and impacted soil, cap system, and asphalt surface. A cross section of the proposed containment facility showing conceptual liner and cap details is presented in Figure 4. Final design of the containment facility will be subject to approval by EPA.

Ambient air monitoring around the site will continue during construction to ensure that remedial actions are carried out in a manner that is protective of public health. Monitoring of groundwater at the site will be conducted as part the closure and O & M requirements for the OCF and to ensure that the proposed remedy remains protective of area groundwater. Long term O & M will include cap maintenance, leachate collection and treatment, stormwater runoff control, institutional controls and reviews conducted no less often than every five (5) years to ensure the remedy continues to provide adequate protection of human health and the environment.

Cleanup Goals

The remediation goals in the original ROD are being retained with some exceptions. The goals for the various media are described below:

* The surface soil cleanup level for lead is 1,000 ppm, the cleanup level established in the ROD.

* The subsurface cleanup level for lead was the RCRA characteristic waste EP toxicity criteria. For newly generated waste, this test has been replaced by the TCLP criteria since the ROD was signed. EPA will allow use of the EP Toxicity criteria for materials that remain on-site to avoid having to retest material already characterized under the ROD.

* Not all subsurface soils and contaminated material that exceed EP Toxicity criteria will be removed under the ROD Amendment. EPA has determined that the buried matte material on the Gould property does not pose a significant risk for contamination of groundwater based on supplemental analysis, including additional leaching test information, conducted on this material. EPA will reassess the need for remedial action for subsurface soils and other waste materials in the Lake Area portion of the Rhone-Poulenc property after the stockpiled materials currently located on the property have been moved to the OCF and a risk assessment for the Rhone-Poulenc constituents has been completed.

* Treatment and recycle of battery casings will no longer be an objective of this remedial action.

Remedial Action Performance Standards

The Soils Operable Unit remedial action area is shown in Figure 5. The Soils Operable Unit remedial action shall be completed subject to the following standards of performance:

A. Within the Operable Unit remedial action areas, all surface soil with lead concentrations of 1,000 ppm or above shall be excavated and placed in the on-site containment facility. There are no specific ARARs for lead in industrial soil; however, a surface soil cleanup level of 1,000 ppm was established in the ROD. EPA set the lead cleanup level at 1,000 ppm for surface soil based on current and future industrial land use. The 1,000 ppm cleanup level is sufficiently protective

requirements, specifically 1) 264.111 closure performance standard, 2) 264.114 disposal/decontamination requirements for soils, equipment, and structures, and 3) 264.117 post-closure care and use of property.

G. Stormwater runoff and leachate collected from the OCF will be managed in accordance with requirements of the Clean Water Act and Oregon Administrative Rules.

H. Groundwater monitoring will be required to ensure that the remedy is protective of Site groundwater and complies with RCRA closure and post-closure requirements.

Assessment of Further Remedial Action for the Lake Area

EPA has determined, in consultation with DEQ, that a final decision on the need for a soil cap or other remedial action for subsurface lead contamination in the Lake Area should be deferred until after the following actions have been completed: 1) removal of treated and untreated Gould site waste material currently stockpiled on the Rhone-Poulenc property, 2) removal of surface soil contaminated above 1,000 mg/kg lead, 3) confirmation sampling, and 4) completion of a risk assessment by Rhone-Poulenc for organic contamination in the Lake Area.

STATUTORY DETERMINATIONS

EPA's primary responsibility at CERCLA sites is to undertake remedial actions that are protective of human health and the environment. In addition, Section 121 of CERCLA, 42 U.S.C. §9621, establishes several other statutory requirements and preferences including: (1) a requirement that the remedial action complies with applicable or relevant and appropriate environmental standards established under federal and state laws unless a statutory waiver is invoked; (2) a requirement that the remedial action be cost-effective and utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable; and, (3) a statutory preference for remedies that permanently and significantly reduce the volume, toxicity or mobility of hazardous substances over remedies that do not achieve such results through treatment.

for on-site workers, and has been used in the past for similarly contaminated sites where the expected future land use is industrial. This is consistent with the present and anticipated future land use.

B. Contaminated waste shipped off-site must meet all applicable regulations including RCRA requirements for defining, characterizing and listing hazardous waste (40 CFR 261), land disposal restrictions (40 CFR 268) and EPA's Off-Site Disposal Rule (40 CFR 300.440). Any off-site transportation of RCRA characteristic soil must comply with RCRA hazardous waste manifesting and transporter requirements (40 CFR 262 subpart B and 40 CFR 263), the Department of Transportation Hazardous Materials Regulations which address shipment of any hazardous material off-site, and Oregon Administrative Rules (OAR Chapter 340, Division 101-105).

C. On-site excavation of contaminated soils and sediments will be by conventional protective methods. During these activities, air monitoring will be conducted and dust suppressive measures will be utilized to control the release of dust and particulates. These measures will comply with the applicable federal Clean Air Act requirements (40 CFR Part 50) and Oregon Administrative Rules.

D. Occupational Safety and Health Act (OSHA) requirements (29 CFR Part 1910 and 1926) pertain to workers engaged in response or other hazardous waste operations. Lead-contaminated soil excavation is considered a hazardous waste operation at this Site. Although this regulation is not an ARAR, remedial workers must comply with these OSHA requirements.

E. Dredging and filling of the East Doane Lake remnant is subject to the requirements of Section 404 of the Clean Water Act, and a mitigation/restoration plan will be required.

F. The OCF will be constructed above the water table and will be designed, constructed and operated to meet 40 CFR 264 Subpart N requirements for landfills, including: 1) 264.301 design and operating requirements for liners and leachate collection systems, 2) 264.303 monitoring and inspection requirements, 3) 264.310 closure and post-closure care requirements for covers which minimize migration of liquids, function with minimum maintenance, and provide long-term integrity. 40 CFR 264 Subpart G, Closure and Post-Closure requirements are also relevant and appropriate

The selected remedial action meets the statutory requirements of CERCLA, and, to the extent practicable, the NCP. The evaluation criteria are discussed below.

Protection of Human Health and the Environment:

The amended operable unit remedial action is protective of human health and the environment. It reduces risks associated with lead contamination by excavating contaminated material, treating highly contaminated material, and placing contaminated material in the lined and capped on-Site containment facility.

While this remedial action will address contaminated soils above levels protective of on-Site workers under a future industrial land use scenario, lead will remain above residential health-based levels thereby prohibiting unrestricted future land use. Reviews will be conducted no less often than every five (5) years following initiation of the remedial action to ensure adequate protection of human health and the environment.

Compliance with Applicable or Relevant and Appropriate Requirements:

Pursuant to Section 121(d) of CERCLA, 42 U.S.C. §9621(d), and Section 300.435(b)(2) of the NCP, remedial actions shall, during their implementation and upon their completion, reach a level or standard of control for such hazardous substances, pollutants or contaminants which at least attains legally applicable or relevant and appropriate federal standards, requirements, criteria, or limitations, or any promulgated standards, requirements, criteria, or limitations under a state environmental or facility siting law that is more stringent than any federal standard (ARARs).

The selected remedial action satisfies the requirements of this section of CERCLA by complying with all identified ARARs. No ARAR waivers have been sought or invoked for any component of the selected remedial action. The chemical- and action-specific and location-specific ARARs for the amended remedy at this Site include the following:

RESOURCE CONSERVATION AND RECOVERY ACT 40 U.S.C. § 6901 et seq.

RCRA regulations (40 CFR 261-263 and 268), and Oregon Administrative Rules (OAR) 340-100-108, address the requirements for defining, characterizing and listing hazardous wastes; for generators pertaining to manifesting, transporting, and recordkeeping; for transporters pertaining to shipment of hazardous wastes off-site; and, land disposal restrictions.

These regulations are applicable to the characterization and off-site disposal of contaminated waste from the Site.

RCRA Regulations 40 CFR Part 264 address Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities. The construction of the OCF and consolidation of contaminated material in the OCF will occur within the area of contamination. The OCF is not considered a new unit. The following are relevant and appropriate to the construction of the OCF:

* 40 CFR 264.18(a) and (b) standards for seismic considerations and floodplain design, construction, operation and maintenance to prevent washout.

* Subpart F: Release From Solid Waste Management Units, 40 CFR 264.91 - 264.100 Groundwater monitoring requirements to establish a detection monitoring program (264.98), a compliance monitoring program (264.99) and corrective action monitoring program (264.100). All monitoring requirements must meet general groundwater monitoring requirements (264.97).

* Subpart G: Closure and Post-closure,
  40 CFR 264.111, Closure performance standard
  40 CFR 264.114, Disposal and decontamination of equipment and structures
  40 CFR 264.117, Post-closure monitoring
  40 CFR 264.119, Post-closure notices

* Subpart L: Waste Piles
  40 CFR 264.251 Design and operating requirements

* Subpart N: Landfills
  40 CFR 264.301 Design and operating requirements to install two liners, a top liner that prevents waste migration into the liner, and a bottom liner that prevents waste migration through the liner. Install leachate collection systems above and between the liners. Construct run-on and run-off control systems capable of handling the peak discharge of the 25-year storm.
  40 CFR 264.303 Monitoring and inspection requirements
  40 CFR 264.310 Closure and post-closure care - Installation of final cover to provide long-term minimization of infiltration; 30 year or longer post closure care and monitoring requirements.

CLEAN AIR ACT 42 U.S.C. §§ 7401 et seq.

40 CFR Part 50 National ambient air quality standards for lead and particulate matter are applicable to the control of fugitive dust emissions during excavation and other field activities.

CLEAN WATER ACT 33 U.S.C. §§ 1251 et seq.

Clean Water Act regulates direct discharges to surface water (Section 301, technology based effluent limitations; 303, 304 federal water quality criteria), indirect discharges to publicly owned treatment works (Section 307, pretreatment), and discharges of dredge-and-fill materials into surface waters (including wetlands) (Section 404).

CWA Section 301 Requirements for Technology Based Effluent Limitations are applicable for direct discharges. Discharge limits for the Gould site will be set to meet the Willamette River water quality criteria for toxic pollutants (OAR 340-41-445)

CWA 303 and 304 Requirements for Federal Water Quality Criteria are substantive requirements that are relevant and appropriate for control of leachate from the OCF.

CWA 307 Regulations for Toxic and Pretreatment standards. Discharges to POTWs may be subject to specific local limits, which are established in City of Portland Code, Section 17. These requirements are applicable if leachate is discharged to the City sewer system.

CWA Section 402 Requires dischargers of pollutants from any point source into surface waters of the U.S. to meet certain requirements and obtain a NPDES permit. On-site discharges from a CERCLA site must meet the substantive NPDES requirements only. 40 CFR 122.26 describes requirements related to storm water discharges.
40 CFR Part 125, Subpart A, describes Criteria and Standards for Imposing Technology-based Treatment Requirements Under Sections 309(B) and 402 of the Act.

40 CFR Part 125 - Subpart K, Criteria and Standards for Best Management Practices Authorized Under Section 304(e) of the Act are applicable to control of releases of hazardous pollutants into surface waters during cleanup.

CWA Section 404 and ORS 196.800 to 196.990 contain requirements that pertain to dredging and filling of hydric soils and/or wetlands areas. Substantive requirements are applicable to the dredging and filling of the East Doane Lake remnant.

HAZARDOUS MATERIALS TRANSPORTATION ACT 49 U.S.C. Ap. §§ 1801 et seq.

49 CFR Parts 171-177 U.S. Dept. of Transportation-Subchapter C - Hazardous Materials Regulations are applicable to any off-site disposal of hazardous waste.

OTHER CRITERIA, GUIDANCE, AND STANDARDS TO BE CONSIDERED (TBCs)

The following guidance was also considered:

> EPA's *Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities* (Office of Solid Waste and Emergency Response [OSWER] Directive No. 9355.4-12; EPA 1994) establishes a residential "screening level" of 400 ppm, above which further study is warranted. A cleanup level of 1,000 ppm has been selected for this Site since this level is considered protective of on-Site workers, and the property comprising the Site is zoned industrial.

In addition, the Occupational Safety and Health Act (29 CFR Parts 19010 and 1926) must be adhered to as it addresses safety requirements for workers engaged in response or other hazardous waste operations.

Cost-Effectiveness:

The cost-effectiveness of each alternative was evaluated, including those which were screened out prior to the alternatives assessment in the Amended Remedy Document. The selected final operable unit remedial action is cost-effective as it affords overall effectiveness and protectiveness proportional to costs. Other remedial alternatives considered were found to be generally more costly without affording additional protectiveness commensurate with their cost.

Utilization of Permanent Solutions and Alternative Treatment Technologies or Resource Recovery Technologies to the Maximum Extent Practicable:

EPA and DEQ have determined that the selected remedial action represents the best balance of tradeoffs among the alternatives considered with respect to EPA's nine evaluation criteria. The remedy represents the maximum extent to which permanent solutions and treatment technologies can be utilized in a cost-effective manner. It is protective of human health and the environment, and complies with all applicable environmental regulations. This remedial action also utilizes treatment where feasible and practicable.

Preference for Treatment As a Principal Element:

Significant quantities of hazardous substances have already been treated at this Site through partial implementation of the ROD.

Treatment of highly contaminated waste materials prior to on-site disposal and treatment of materials classified as hazardous waste prior to off-site disposal will be required; thus this remedy satisfies the statutory preference for treatment as a principal element. By treating the most highly contaminated soil and other waste material prior to disposal in the OCF or at an off-Site permitted landfill, the selected remedy satisfies the preference for treating the principal threat posed by the Site.

Documentation of Significant Changes

The Proposed Plan was released for public comment in April 1996. Comments received during the public comment period and EPA responses are summarized in the attached responsiveness summary. As noted in the responsiveness summary, EPA will address a number of the technical considerations in the comments during the remedial design phase.

The Proposed Plan indicated that EPA will coordinate future cleanup determinations regarding battery casings and other contaminated materials located on the Rhone-Poulenc and ESCO property portions of the Site with DEQ. EPA has determined, in consultation with DEQ, that a final decision on the need for a soil cap or other remedial action to address subsurface lead contamination, including additional removal of subsurface soil and/or treatment, in the Lake Area should be deferred until after the following actions have been completed: 1) removal of treated and untreated Gould Site waste material currently stockpiled on the Rhone-Poulenc property, 2) confirmation sampling for lead, and 3) completion of a risk assessment for this area that includes organic constituents.

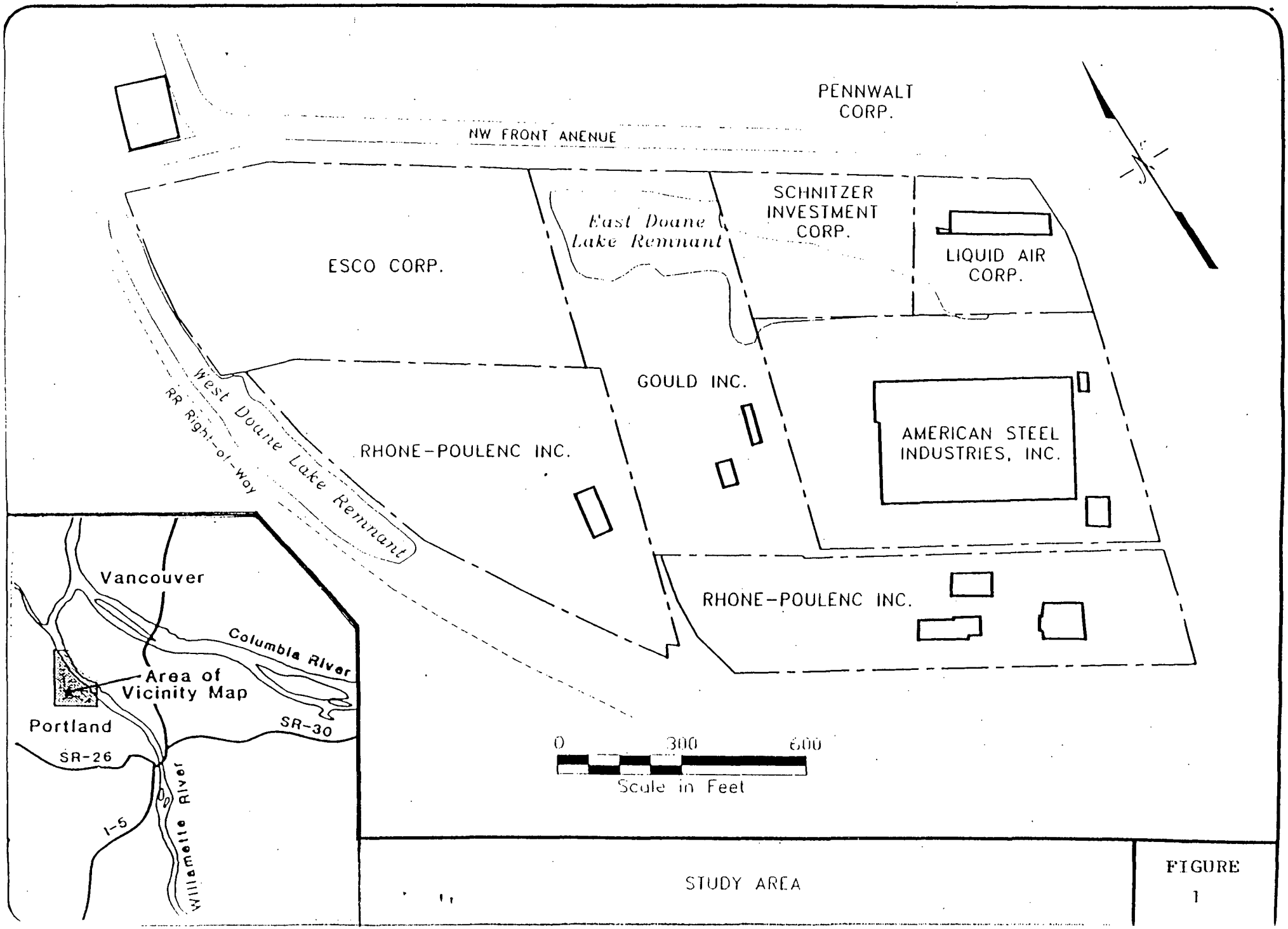
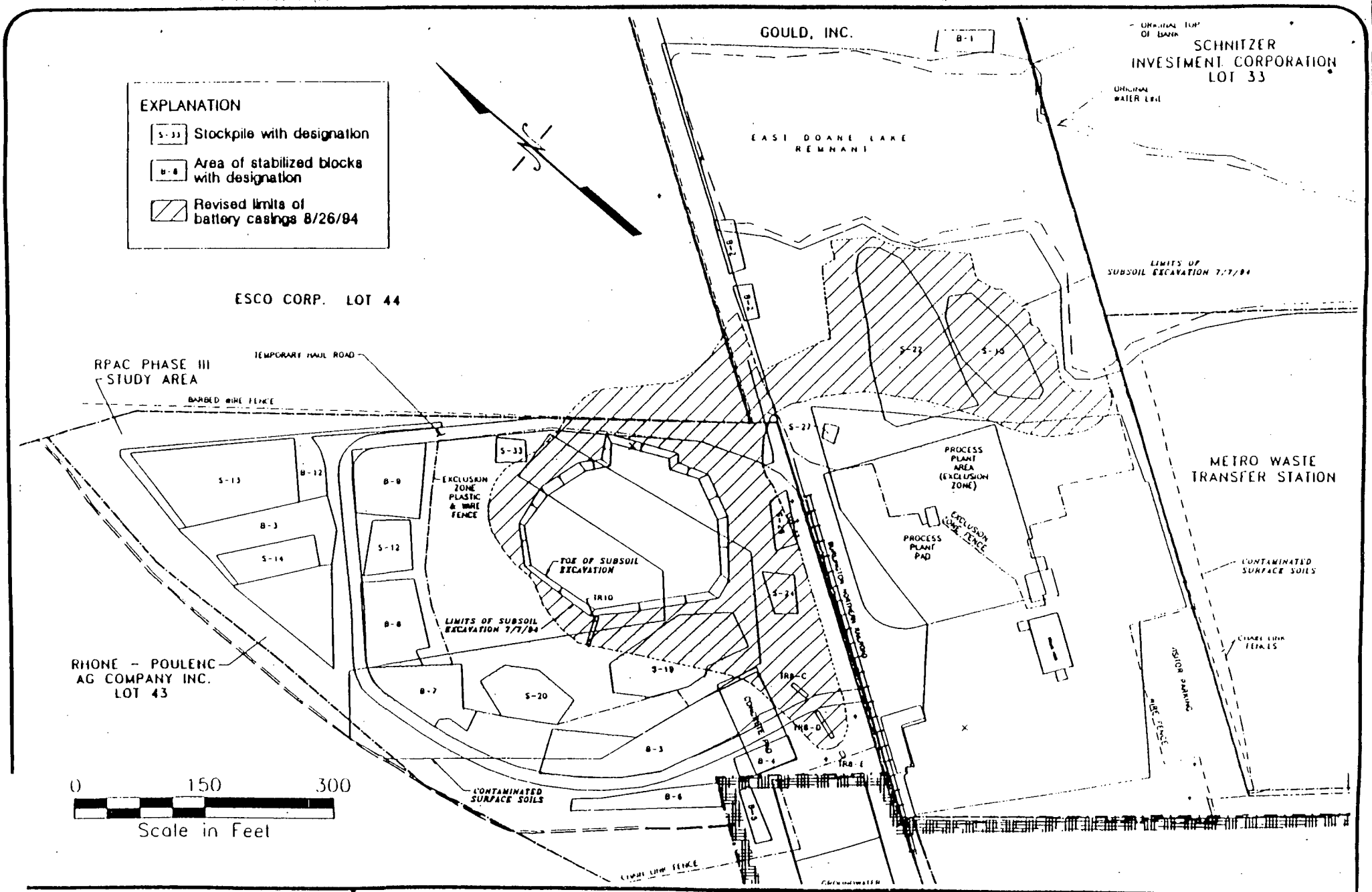

PENNWALT CORP.
NW FRONT ANENUE
SCHNITZER INVESTMENT CORP.
East Doane Lake Remnant
ESCO CORP.
LIQUID AIR CORP.
West Doane Lake Remnant
RR Right-of-way
GOULD INC.
RHONE-POULENC INC.
AMERICAN STEEL INDUSTRIES, INC.
RHONE-POULENC INC.
Vancouver
Columbia River
Area of Vicinity Map
Portland
SR-30
SR-26
I-5
Willamette River
0
300
600
Scale in Feet
STUDY AREA

FIGURE 1



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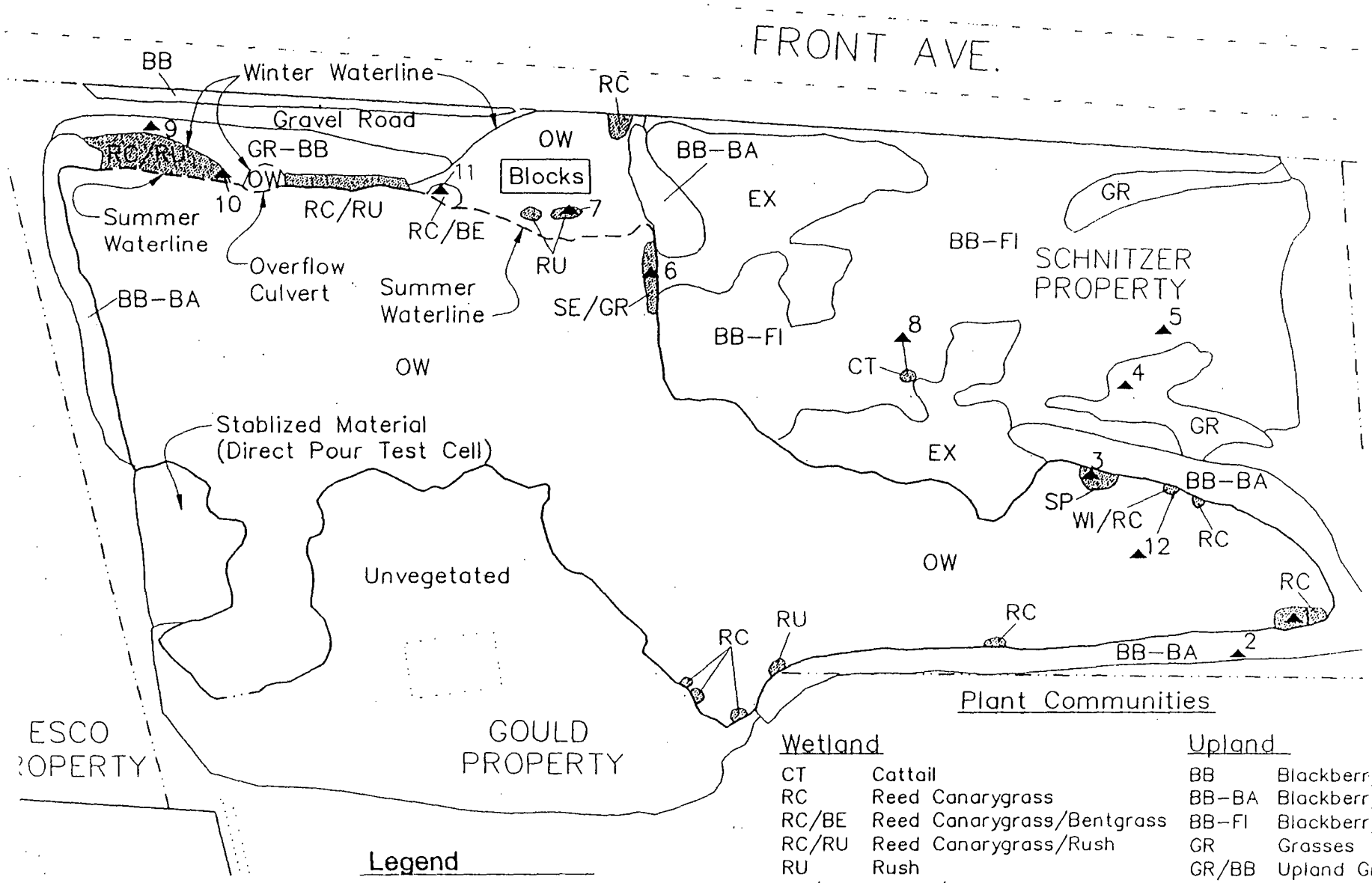
LEAD-IMPACTED AREAS
AND LOCATIONS OF STOCKPILES AND BLOCKS
GOULD SUPERFUND SITE - PORTLAND, OREGEON

Figure 2



Plant Communities

Wetland

CT	Cattail
RC	Reed Canarygrass
RC/BE	Reed Canarygrass/Bentgrass
RC/RU	Reed Canarygrass/Rush
RU	Rush
SE/GR	Sedge/Grass
SP	Spiraea
WI/RC	Willow/Reed Canarygrass

Upland

BB	Blackberry
BB-BA	Blackberry – Along Banks
BB-FI	Blackberry – Upland Fill
GR	Grasses
GR/BB	Upland Grasses/Blackberry

Other

OW	Open Water
EX	Exposed Fill Material (Upland)

Legend

Wetland Areas

▲ Sampling Point

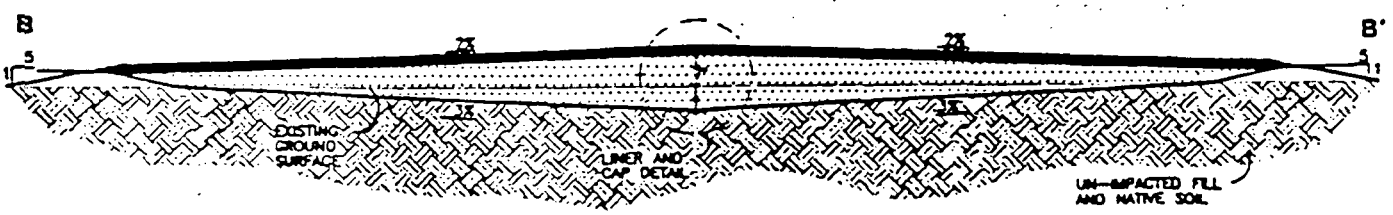
SCALE

0 50 100 200

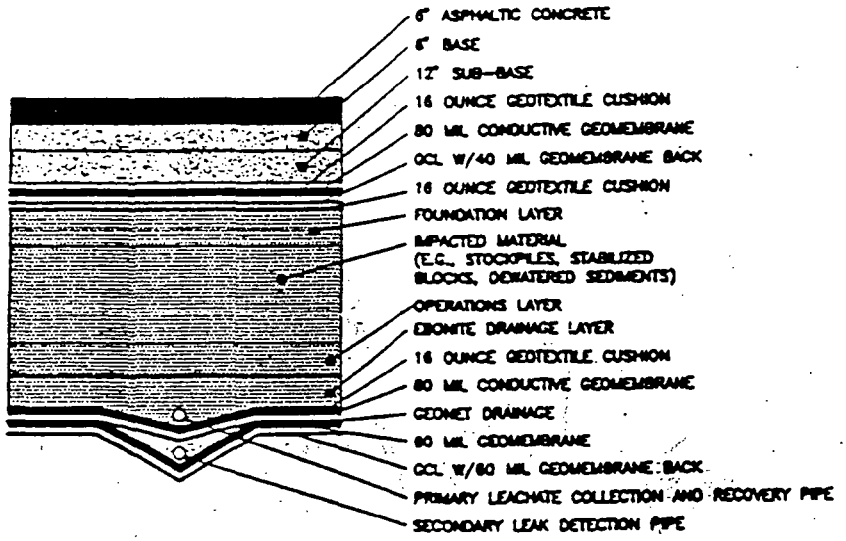
(IN FEET)

1 inch = 100 ft.

Project # 965007NA	EAST DOANE LAKE WETLANDS INVESTIGATION	Map Showing Wetland Areas	Figure 3
WOODWARD-CLYDE CONSULTANTS	Gould Superfund Site PRP Group Portland, Oregon		



SCHEMATIC SECTION B-B'



LINER AND CAP DETAIL

Figure 4

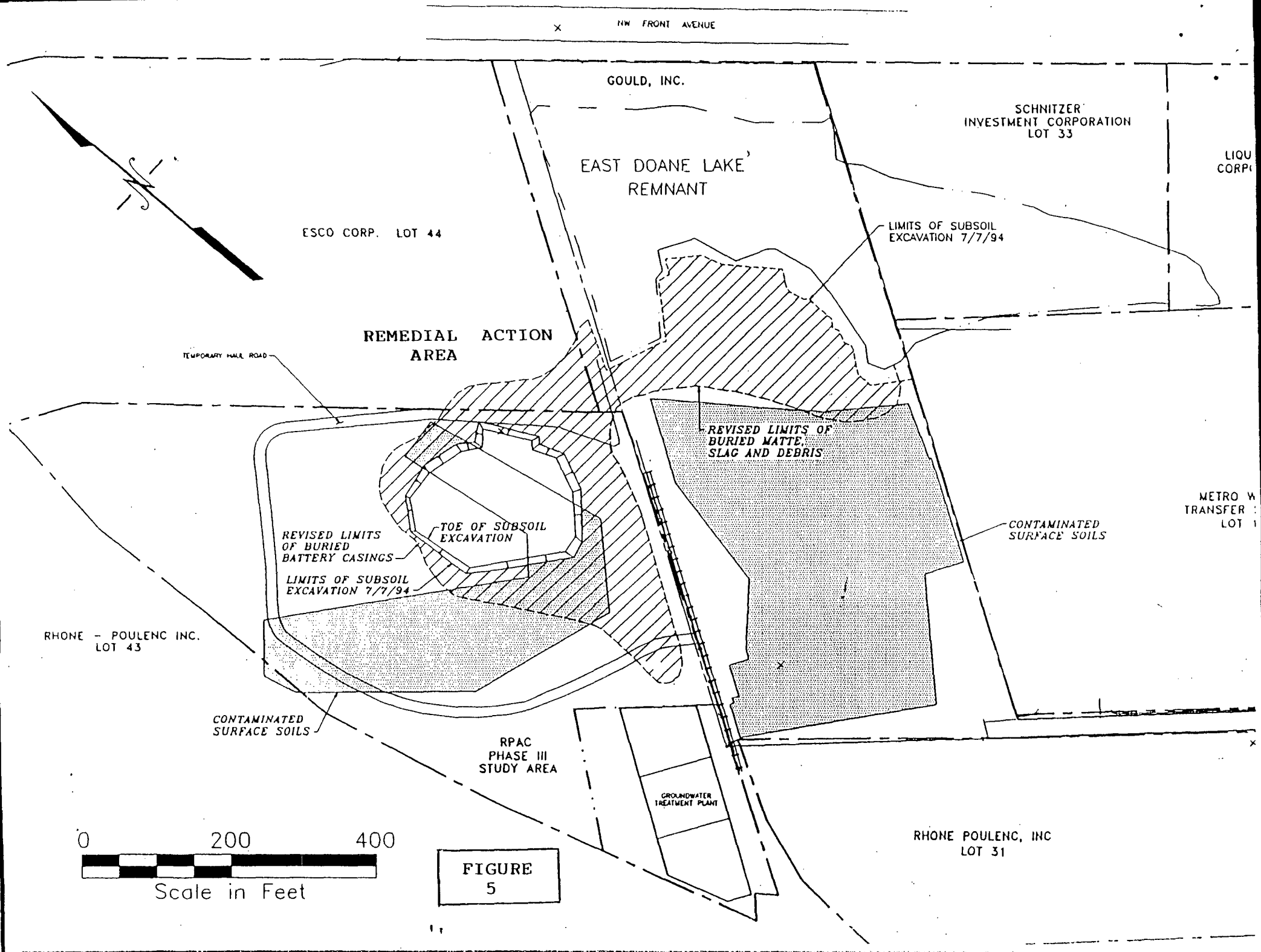
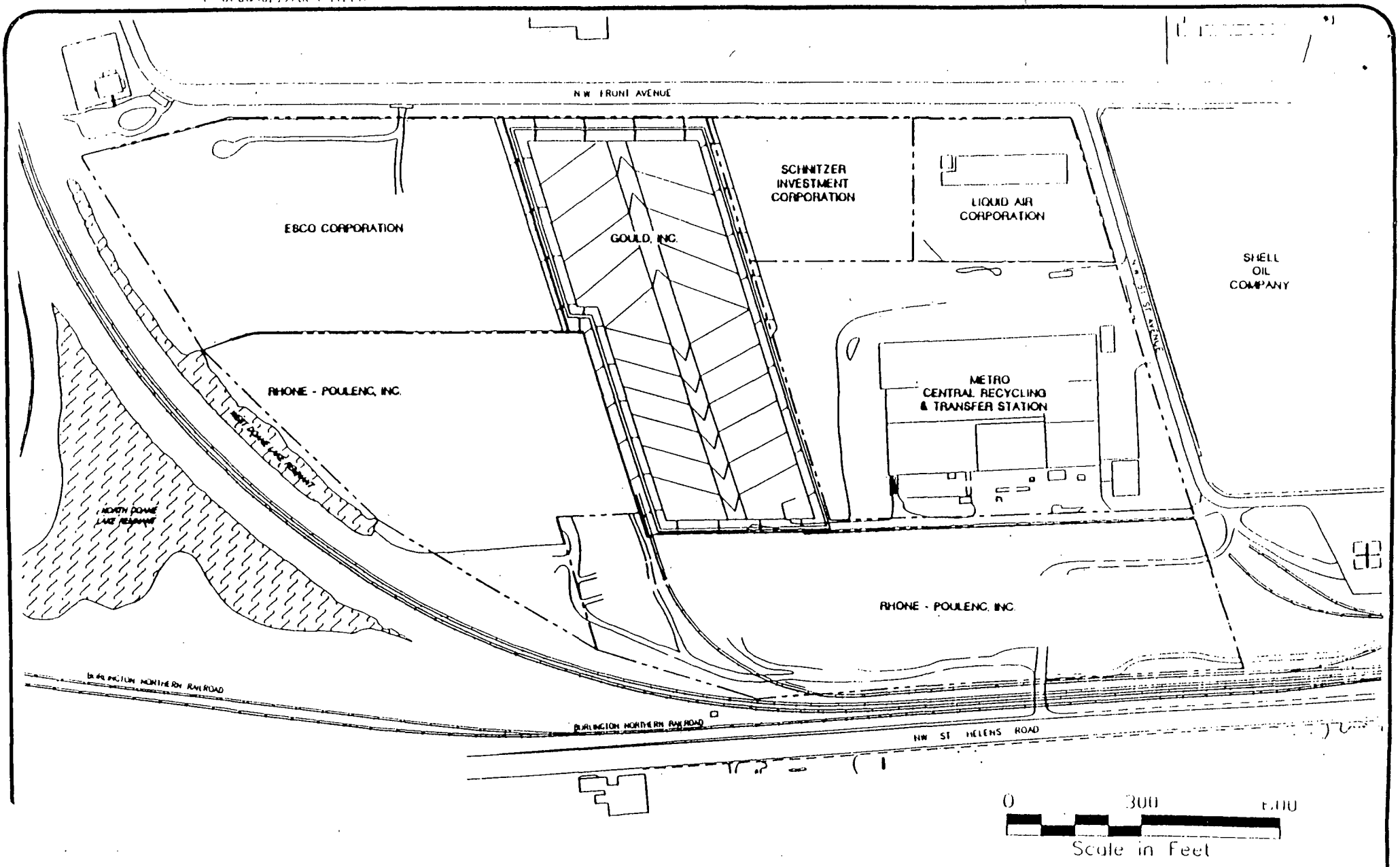

NW FRONT AVENUE
GOULD, INC.
SCHNITZER INVESTMENT CORPORATION LOT 33
EAST DOANE LAKE REMNANT
ESCO CORP. LOT 44
LIMITS OF SUBSOIL EXCAVATION 7/7/94
REMEDIAL ACTION AREA
TEMPORARY HAUL ROAD
REVISED LIMITS OF BURIED MATTE, SLAG AND DEBRIS
METRO W TRANSFER LOT
CONTAMINATED SURFACE SOILS
REVISED LIMITS OF BURIED BATTERY CASINGS
TOE OF SUBSOIL EXCAVATION
LIMITS OF SUBSOIL EXCAVATION 7/7/94
RHONE - POULENC INC. LOT 43
CONTAMINATED SURFACE SOILS
RPAC PHASE III STUDY AREA
GROUNDWATER TREATMENT PLANT
RHONE POULENC, INC LOT 31
0
200
400
Scale in Feet

FIGURE 5



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GOULD SUPERFUND SITE CONCEPTUAL ON-SITE CONTAINMENT FACILITY

Figure 6

Gould Superfund Site
Amended ROD
Table 1

Material	1988 ROD Quantity	Current Quantity Estimates	Estimated Quantity to be Placed in OCF*	Estimated Quantity to be Left in Place**
Gould site:				
Surface Soils	-	-	-	-
Casings	54,100	9,708	9,708	-
Matte/debris	6,000	33,451	9,181	22,400
Subsoil	9,580	6,133	3,000	3,000
R-P/ESCO				
Overburden	970	14,170	3,991	10,000
Casings	26,700	28,536	10,215	17,600
Bottom fill	-	725	25	700
Subsoils	6,470	5,927	3,370	2,400
East Doane Lake				
Sediments	5,500	5,483	5,483	-
Plastic	-	500	-	-
Totals:	109,320	104,633	44,390	56,100

*Note 1: the ARD document estimates 60,000 cubic yards of contaminated material would be placed in the OCF. The ARD estimates are higher than the total shown in this column because the ARD estimates include additional volume associated with the stabilized blocks and an estimated additional 5,000 cubic yards of contaminated surface material that will be scraped from the surface of the Site.

**Note 2: total does not include approximately 4,143 cubic yards of material that has been either: 1) treated and recycled, 2) disposed off-site or 3) treated and placed on-site

APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY
GOULD SITE SOILS OPERABLE UNIT
AMENDED RECORD OF DECISION

This responsiveness summary summarizes and responds to substantive comments received during the public comment period regarding United States Environmental Protection Agency's (EPA's) proposed cleanup plan for the Gould Superfund Site located in Portland, Oregon. The Proposed Plan was based on information in the administrative record for the ROD Amendment. The Administrative Record and the Proposed Plan are available for review at the Multnomah County Central Library in downtown Portland, Oregon and at EPA's offices in Seattle, Washington. Copies of the Proposed Plan were mailed to local citizens and other interest groups that were on a mailing list developed as part of the Community Relations Plan for this Site.

One comment letter was received during the public comment period. The comment letter and follow up responses from the Gould Site PRP Group and the commenter are in the Administrative Record for this Site.

Comments and Agency Responses

1) **Zoning not addressed as an ARAR**

Comment Commenter requested that Portland's Planning and Zoning requirements for siting of solid waste facilities be considered ARARs, and specifically identified 100 foot setback requirements contained in the Sections 33.254.080 and 33.254.090 of the Portland Planning and Zoning ordinance as ARARs for the construction of the On-Site Containment Facility (OCF). This portion of the Portland Planning and Zoning Ordinance regulates mining and waste-related uses.

Response In general, only federal and state laws or regulations are ARARs and local zoning ordinances are not ARARs. However, EPA, in this instance, agrees with the commenter that the Portland Planning and Zoning ordinance (the "Ordinance") setback requirements are relevant and appropriate. EPA's conclusion is based on two factors: (1) the Ordinance was promulgated pursuant to a State law, see Chapter 197 of the Oregon Revised Statutes; and (2) the Ordinance is enforceable by the State of Oregon, ORS 197.090. Nonetheless, EPA has determined that, under the Ordinance, the proposed setback requirement does not apply to the proposed cleanup action. The use of the existing area of lead contamination within the Site as a disposal area is a "grandfathered" non-conforming use under the Ordinance. Grandfathered non-conforming uses are not subject to the Ordinance's set back requirements. EPA has also concluded that, under the Ordinance, the disposal of hazardous substances in the

On-Site Containment Facility will not change the non-conforming use status.

Section 33.258.035 of the Ordinance defines a non-conforming use as a use which was allowed when established and was maintained over time. Section 33.258.050 of the Ordinance allows such a non-conforming use to continue to operate and for a change in the operation of the use. This Section of the Ordinance also permits a use to be changed to another use within the same use category as a matter of right.

EPA's cleanup includes the disposal of waste in the same area where waste has been disposed of and landfilled since 1949, therefore this cleanup activity satisfies the Ordinance's criteria for a non-conforming use. The Amended Remedy addresses wastes which were disposed of at the Site prior to the implementation of the Ordinance. Waste disposal and landfill activities began in approximately 1949. This is well before the Ordinance was mandated by ORS 197 in 1973. The disposal area has been continuously maintained as a disposal area since disposal activities began. As such, disposal of wastes within the Site is a grandfathered non-conforming use which the Ordinance permits. The setback requirements need not be satisfied during implementation of the Amended Remedy.

A determination that the Ordinance is an ARAR, but that the cleanup activity is a grandfathered non-conforming use, and thus, not subject to the setback requirements, is consistent with the NCP. The NCP makes clear that EPA may satisfy an ARAR by meeting the conditions for an exception to such ARAR, see 55 F.R. at 8741 (March 8, 1990).

Nevertheless, EPA intends to consider setbacks during the design and implementation of the Amended Remedy. EPA will consider providing setbacks from public streets and property lines which are outside the existing disposal area. The existing disposal area covers several properties, including the commenter's. It would be impracticable to use setbacks on properties within the existing disposal area.

2) **Landfill siting requirements**

Comment Commenter states that it agrees with the Oregon Department of Environmental Quality that RCRA Subtitle C landfill siting requirements should be included as ARARs for the ROD Amendment. In particular, the commenter maintains that seismic and flood related standards contained in 40 C.F.R. § 264.18 should be ARARs.

Response The commenter is incorrect to suggest that the Oregon Department of Environmental Quality identified RCRA Subtitle C landfill siting requirements as ARARs. Nevertheless, EPA agrees that 40 C.F.R. § 264.18, which includes seismic and flood related standards, is relevant and appropriate to the remedial actions

selected in the ROD Amendment. EPA will ensure that these requirements are met during the remedial design of the Amended Remedy.

3) **Proposed plan not protective of adjoining landowners and increases the risk of liability of adjoining landowners.**

Comment The proposed remedy is not protective of adjoining landowners and increases liability of adjoining landowners because contamination will be covered, future removal will be expensive and it forces the commenter to maintain property that contains known contamination. The commenter further suggests that the PRPs should purchase East Doane Lake area or require Rhone Poulenc to indemnify the commenter with respect to liability for RP organics on the commenter's property.

Response This comment raised three concerns. First, whether the Amended Remedy is protective of human health and the environment on properties outside of the disposal area. Second, whether there will be a need for further response actions if all sediment contamination in the area where the OCF will be constructed is not removed pursuant to the Amended Remedy. Third, whether the PRP group or Rhone-Poulenc should compensate for the commenter for RP organics on its property.

EPA believes that the Amended Remedy is protective of human health and the environment. The Amended Remedy protects adjoining landowners from Site contamination. The commenter's property includes areas that are within the area of contamination being addressed by this remedial action. The commenter's property is contaminated with hazardous substances associated with the Gould Site operations and other sources, including material disposed of by the commenter which contains hazardous substances. The proposed action will include excavation of contaminated sediments from the commenter's property and containment in a lined and capped containment facility located on the Gould property. The sediments that will be removed are contaminated with lead above specified cleanup levels. Organic contamination is commingled with the lead-contaminated sediments and will be removed from the commenter's property and placed in the OCF. Some sediments with low levels of organic contamination may not be removed. However, if such sediments are not removed, it will be after DEQ has determined that removal of such contamination is not necessary to protect human health or the environment. The Amended Remedy as implemented along with any State directed removal actions will substantially reduce or eliminate the potential for exposure to hazardous substances in this area.

The proposed plan for the Amended Remedy indicated that sediments removal will occur to a depth of between 1.5 to 2.0 feet (the depth may vary at individual locations). Rhone Poulenc is, pursuant to a consent agreement with DEQ, committed to evaluate the residual organic contamination in sediments below

two feet. The results of the evaluation will be used by DEQ to determine if sediments not addressed by this remedy, ie, below 2 ft or in areas not contaminated with lead above the cleanup levels, need to be removed or otherwise remediated to be protective. The work is being conducted as a time critical action under an existing consent order and is scheduled to be completed in time to allow a determination during the preliminary design phase of this remedy. If DEQ determines that additional removal of sediments is required, this work will be coordinated with the sediment removal to be conducted as part of this ROD Amendment and will occur prior to the construction of the OCF.

Lastly, EPA believes it inappropriate for EPA to direct other parties to purchase East Doane lake from the commenter or direct Rhone-Poulenc to indemnify the Commenter. CERCLA does not provide EPA with the authority to order such relief. The relief the commenter seeks is available to the commenter by agreement or by civil suit. EPA notes that the commenter is essentially seeking the requested relief in a civil action before the United States District Court for the District of Oregon. EPA believes this is the appropriate forum to receive such relief. EPA also disagrees with the commenter's conclusion that the Amended Remedy will increase the risk of liability of adjoining landowners. Implementation of the Amended Remedy will not cause contamination to spread to areas which are not already contaminated. Accordingly, the Amended Remedy will not increase the risk of liability to non-contaminated properties adjoining the Site.

4) **Hydrogeologic Impact of the Remedy**

Comment The hydrogeologic impact of filling lake and building OCF has not been considered. Commenter stated that there is a serious risk that filling the lake will cause increased migration of contaminants onto their property. Filling will likely cause contaminated water and sediment to be extruded into adjoining soils with the direct result that contamination on Schnitzer property will increase

Comment. Filling lake will displace free liquid and sediments and force them through the subsurface passages onto Schnitzer property, and pressure from the OCF will force liquid currently caught in pores of soil to migrate into groundwater, and could have high levels of contamination

Comment. Subsurface movement will prevent the commenter from mining fluff (shredder reside) on its property, because contaminants will flow into any mining excavation.

Comment. EPA urged to fully analyze the hydrogeologic impact of the proposed remedy and allow meaning full comment prior to amending the ROD.

Response EPA agrees that the hydrogeologic impact of filling the East Doane lake remnant needs to be fully evaluated and indicated

as such in the Proposed Plan. EPA will require the PRP Group to conduct a detailed analysis as part of the preliminary design. The results of the analysis will be available to the public, including any adjacent property owners.

5) **ROD improperly addresses organics**

Comment EPA should clarify the nature of the portions of the proposed ROD Amendment that addresses organics. Conclusions are reached in the ARD about the handling and encapsulation of organics that appear to be beyond the scope of the RI/FS process. Where no characterization of the organics has occurred within the formalized RI/FS process, it is inappropriate for the proposed ROD Amendment to endorse remedies that involve the on-site disposal of some organics contaminated sediment and leaving in place of other contaminated sediments.

Response EPA has added language in ROD Amendment to clarify the handling of organics contaminated sediments.

EPA is not limited to the RI/FS process in reviewing post-ROD information. Agency guidance (OSWER Directive 9355.3-02) notes that after a ROD is signed, new information may be generated during the RD/RA process that could affect the remedy selected in the ROD. The original ROD for the Gould Soils Operable Unit was focused on remediation of lead contamination, which was identified as the primary contaminant of concern. Information regarding organics contamination has been generated since the ROD was signed in 1988. In addition to the characterization work conducted under the Rhone Poulenc RI/FS, additional data has been collected as part of the evaluation of the Gould Site remedial action. Information from the additional Gould Site studies was placed in the administrative record for the ROD Amendment.

Organic contaminants that are commingled with lead above previously established cleanup levels will be addressed by this ROD Amendment. EPA did not established cleanup levels for organic contamination in the original ROD or as part of this ROD Amendment. EPA has determined that the onsite containment facility can be designed, constructed and operated to be protective of human health and the environment for the lead and organic contaminated materials that are being addressed by the ROD Amendment. DEQ will determine the levels that will be protective for organic contamination associated with the Rhone Poulenc facility, including areas on the Gould site not addressed by the ROD Amendment. DEQ anticipates making a determination on the remaining sediments prior to completion of remedial design.

6) **Consolidation and settlement analysis**

Comment The proposed plan fails to address consolidation and differential settlement. Substantial differences in settlement will occur between areas with indigenous cohesive soil and those

areas that are compacted and filled. Areas will settle at different rates and put stress on liner, leak detection system, contents of the OCF and the cover. liner, etc could fail and leachate could be release to groundwater. Future use could also add to settlement problems.

Response EPA and DEQ determined that a detailed design phase would be necessary to ensure that agency concerns, including those expressed in this comment, will be adequately addressed. The agency agrees with the commenter that consolidation and differential settlement analysis is needed, as noted in the proposed plan ("the containment facility must be designed to provide long term structural stability and effective containment of the waste"). A detailed analysis will be conducted as part of the preliminary design phase. The results of the consolidation and settlement analysis, as well as other preliminary design information, will be available to the public.

7) **Lateral and vertical support**

Comment Areas surrounding the OCF that consist of fluff will not offer sufficient lateral support to support the OCF. Require a complete analysis of lateral and vertical support before an OCF is determined to be a feasible remedy.

Response The agency agrees that a complete analysis of lateral and vertical support is necessary. An analysis will be completed as part of the predesign or design phase.

8) **Leachate collection detection system**

Comment There is a lack of detail on design of the leachate collection and detection system.

Response The ARD included a conceptual view of a leachate collection and detection system and description of the objectives of the system. Detailed information on the leachate collection and detection system will be developed as part of remedial design.

9) **Inadedequate analysis of neighborhood stormwater runoff**

Comment The document ignores impact of filling East Doane lake on stormwater runoff (currently buffers large storms). The alternative could overload stormwater collection system. An analysis should be made available for public comment.

Response The East Doane lake remnant may currently provide some buffering of runoff during major storms. Years of filling and waste disposal activity have significantly altered East Doane lake remnant, however, and EPA believes that stormwater runoff in the area can be better managed through engineered control and collection systems. Details of the stormwater collection and

management system for the Gould site will be developed in the design phase of the project. The system will be designed to include adequate capacity to accommodate major storm events.

10) **Impact of construction on neighbors**

Comment Runoff could lead to additional contamination of neighboring property; and severe traffic problems likely during construction.

Response Control of runoff was a requirement of the original ROD and will be a design requirement for the OCF. There will undoubtedly be short term impacts, like increased traffic, on neighboring property during the construction. There is already a considerable amount of traffic in the vicinity of the site associated with nearby operating industries and the METRO waste transfer station. EPA will attempt to minimize direct impacts on adjoining landowners, although some short term impacts will be unavoidable because of space limitations and the need address contaminants on the commenter's property.

11) **Handling of contaminated water**

Comment Commenter expressed concern that the ROD doesn't address handling and disposal of contaminated water from dredging and dewatering sediment, and requested that EPA require the PRPs to address the means of treating the water prior to disposal to ensure no contamination of adjacent property.

Response EPA agrees with the commenter that handling and disposal of contaminated water from dredging and dewatering sediment needs to be addressed as noted in the proposed plan. EPA will require that the operation minimize short term impacts from dredging and construction to the extent practicable. Contaminated water from dewatering the sediments will be collected and treated as part of the remedial action.

12) **Details and documentation**

Comment The ARD lacks the specificity to comment on the proposal, and more comprehensive documentation must be developed and provided to the public to satisfy the public notice requirements.

Response The lack of specificity has been discussed in the responses to several of the previous comments. EPA acknowledges that the selected alternative as described in the ARD did not include specific details that are typically addressed as part of remedial design. Information developed during design will be made available to the commenter. EPA does not plan to conduct an additional public comment period during the design phase for this project, however. Commenters may submit information to EPA after the ROD Amendment is signed and EPA will review the information to determine if it should be considered by the agency. If EPA

determines that comments submitted by the commenter warrants formal consideration, EPA will prepare a formal response to the information received and document the response in the administrative record.

If information generated during the remedial design phase results in significant changes to the remedy as described in the ROD Amendment, then the appropriate public notice requirements will be followed.

APPENDIX B

Letter of Concurrence from
The Oregon Department of Environmental Quality

APPENDIX C

Administrative Record Index

(GOADD) GOULD INC. - GOULD INC. - ROD AMENDMENT AR INDEX

HEADING: 0. 0. . . TABLE OF CONTENTS/INDEX

HEADING: 1. 0. . . GOULD REMEDIAL ADMINISTRATIVE RECORD
1. 0. . . V DOC ID: 40662
DATE: PAGES: 0
AUTHOR(S): ADDRESSEE(S):

DESCRIPTION: Refer to the Gould Remedial Administrative Record located in the Superfund Region 10 Records Center and the Multnomah County Library for the 1988 Record of Decision and supporting documentation

HEADING: 3. 0. . . CASINGS/SOILS UNIT
SUB-HEAD: 3. 5. . . Vol. REVISED REMEDY REMEDIAL ACTION
SUB-HEAD: 3. 5. 1. . Vol. Correspondence

:
3. 5. 1. . V1028958 DOC ID: 40709
DATE: 11/19/93 PAGES: 2
AUTHOR(S): ADDRESSEE(S):
James F. Cronmiller/Gould Electronics Chip Humphrey/EPA
DESCRIPTION: Letter expressing some concerns with the ongoing remedial efforts at the Gould Superfund Site

3. 5. 1. . V1028959 DOC ID: 40710
DATE: 1/14/94 PAGES: 5
AUTHOR(S): ADDRESSEE(S):
Steven Oster/Wilkie Farr & Gallagher Ted Yackulic/EPA
DESCRIPTION: Request that EPA reconsider the remedial action at the Gould Superfund Site

3. 5. 1. . V1028960 DOC ID: 40711
DATE: 2/ 1/94 PAGES: 32
AUTHOR(S): ADDRESSEE(S):
Jay F. Young/NL Industries Chip Humphrey/EPA
DESCRIPTION: Requested information regarding costs to complete remedial action, product recyclability and plant operation at the Gould Site

3. 5. 1. . V1028961 DOC ID: 40712
DATE: 3/21/94 PAGES: 2
AUTHOR(S): ADDRESSEE(S):
Mavis Kent/ODEQ
DESCRIPTION: Letter identifying DEQ general concerns with alternatives at the Rhone-Poulenc property and requesting consideration during the development of the alternatives

3. 5. 1. . V1028962 DOC ID: 40713

DATE: 3/30/94 PAGES: 2
AUTHOR(S): ADDRESSEE(S):
Chip Humphrey/EPA Unknown
DESCRIPTION: Memorandum regarding the Gould Meeting on March 23, 1994 (written to File)

3. 5. 1. . V1028963 DOC ID: 40714
DATE: 7/ 7/94 PAGES: 19
AUTHOR(S): ADDRESSEE(S):
Jay F. Young/NL Industries Chip Humphrey/EPA
DESCRIPTION: Notification of Site Characterization Study and Temporary Suspension of Stabilization Operations at the Gould Superfund Site

g stab

3. 5. 1. . V1028964 DOC ID: 40715
DATE: 8/ 3/94 PAGES: 4
AUTHOR(S): ADDRESSEE(S):
Michael C. Veysey/Gould, Inc. Ted Yackulic/EPA
DESCRIPTION: Letter expressing concern about continuin activities at the Gould Superfund Site and requesting stabilization be suspended pending selection of a final remedy

3. 5. 1. . V1028965 DOC ID: 40716
DATE: 11/ 7/94 PAGES: 13
AUTHOR(S): ADDRESSEE(S):
Chip Humphrey/EPA Jay F. Young/NL Industries
DESCRIPTION: Preliminary EPA and support agency comments on the draft Focused Feasibility Study for the Gould Superfund Site

3. 5. 1. . V1028966 DOC ID: 40717
DATE: 12/15/94 PAGES: 5
AUTHOR(S): ADDRESSEE(S):
Mark E. Hawley/ENVIRON Corporation Chip Humphrey/EPA
DESCRIPTION: Response to comments received on the Focused Feasibility Study that was submitted on September 30, 1994

3. 5. 1. . V1028967 DOC ID: 40718
DATE: 2/ 8/95 PAGES: 18
AUTHOR(S): ADDRESSEE(S):
Michael C. Veysey/Gould, Inc.
Ted Yackulic/EPA
DESCRIPTION: Response to 1/18/95 request that the Gould Site PRP Group formally advise EPA of its position on the need to further coordinate remedial action at the Gould Superfund Site with the ongoing RI/FS and remedial action at the Rhone-Poulenc Site

3. 5. 1. . V1028968 DOC ID: 40719

DATE: 2/10/95 PAGES: 2
AUTHOR(S): ADDRESSEE(S):
David L. Blount/Copeland Landye Bennett & Wolf Chip Humphrey/EPA
Ted Yackulic/EPA
DESCRIPTION: Letter confirming that Canonie Environmental has terminated its contract with the Gould site PRP Group

3. 5. 1. . V1028969 DOC ID: 40720
DATE: 2/10/95 PAGES: 1
AUTHOR(S): ADDRESSEE(S):
Robert B. Hopkins/Copeland Landye Bennett & Wolf Canonie Environmental Services Corp.
DESCRIPTION: Letter demanding that Canonie immediately leave the Gould site due to inappropriate and unilateral conduct and contract breaches

3. 5. 1. . V1028970 DOC ID: 40721
DATE: 2/16/95 PAGES: 4
AUTHOR(S): ADDRESSEE(S):
Jay F. Young/NL Industries Chip Humphrey/EPA
Ted Yackulic/EPA
DESCRIPTION: Transmittal of a schedule for sampling the stabilized blocks at the Gould Superfund Site and answers to various EPA questions regarding the cost calculations in the Focused Feasibility Study

3. 5. 1. . V1028971 DOC ID: 40722
DATE: 12/21/95 PAGES: 6
AUTHOR(S): ADDRESSEE(S):
Chip Humphrey/EPA Jay F. Young/NL Industries
DESCRIPTION: EPA and supporting agency's comments on the Amended Remedy Document for the Gould Superfund Site Soils Operable Unit

3. 5. 1. . V1050816 DOC ID: 68063
DATE: 3/ 7/96 PAGES: 14
AUTHOR(S): ADDRESSEE(S):
Mark E. Hawley/ENVIRON Corporation Chip Humphrey/EPA
DESCRIPTION: Letter on behalf of the Gould Superfund Site PRP Group in support of the remedy proposed in the Amended Remedy Document submitted on 1/26/96.

3. 5. 1. . V1050817 DOC ID: 68064
DATE: 8/16/96 PAGES: 1
AUTHOR(S): ADDRESSEE(S):
Jill Kiernan/Oregon Dept. of Environmental Quality
DESCRIPTION: Letter to preliminarily identify Oregon's applicable or relevant and appropriate requirements (ARARs) for the EPA proposed Record of Decision (ROD) Amendment.

SUB-HEAD: 3. 5. 2. . Vol. Sampling Plans/Work Plans

:

3. 5. 2. . V1028938 DOC ID: 40643
DATE: 6/15/95 PAGES: 100
AUTHOR(S): ADDRESSEE(S):
ENVIRON Corporation Gould Superfund Site PRP Group
DESCRIPTION: Sampling and Analysis Plan for Stage I Investigation of Stockpiles, Stabilized Blocks, and Sediments, Gould Superfund Site, Portland, Oregon

3. 5. 2. . V1028939 DOC ID: 40644
DATE: 12/ 4/95 PAGES: 16
AUTHOR(S): ADDRESSEE(S):

DESCRIPTION: Sampling and Analysis Plan for Stage II Investigation of Lead Fines and Matte Gould Superfund Site, Portland, Oregon

SUB-HEAD: 3. 5. 3. . Vol. Site Investigation Reports

:

3. 5. 3. . V1028942 DOC ID: 40645
DATE: 12/ 1/94 PAGES: 180
AUTHOR(S): ADDRESSEE(S):

DESCRIPTION: Review of Organics Data Collected at the Gould Superfund Site, Portland, Oregon

3. 5. 3. . V1028940 DOC ID: 40646
DATE: 3/31/95 PAGES: 28
AUTHOR(S): ADDRESSEE(S):

DESCRIPTION: Site Condition Report, Gould Superfund Site, Portland, Oregon

3. 5. 3. . V1028937 DOC ID: 40647
DATE: 10/31/95 PAGES: 250
AUTHOR(S): ADDRESSEE(S):

DESCRIPTION: Ground Water Monitoring Field Activities, February 1995 - August 1995

3. 5. 3. . V1050818 DOC ID: 68065
DATE: 4/18/96 PAGES: 25
AUTHOR(S): ADDRESSEE(S):
Woodward-Clyde Consultants
DESCRIPTION: Wetlands Investigation of East Doane Lake, Final Report.

SUB-HEAD: 3. 5. 3. . Vol. Volume 2

:

3. 5. 3. . V1028941 DOC ID: 40648
DATE: 10/31/95 PAGES: 200
AUTHOR(S): ADDRESSEE(S):
ENVIRON Corporation
DESCRIPTION: Stage I Field Activities Report, Gould Superfund Site, Portland, Oregon

SUB-HEAD: 3. 5. 4. . Vol. Focused Feasibility Study

:

3. 5. 4. . V1028954 DOC ID: 40663
DATE: 9/30/94 PAGES: 89
AUTHOR(S): ADDRESSEE(S):

DESCRIPTION: Focused Feasibility Study for the Gould Superfund Site, Portland, Oregon, Volume I, Main Report, Tables, and Figures (Redacted Copy, Business Confidential Information Removed)

3. 5. 4. . V1028955 DOC ID: 40664
DATE: 9/30/94 PAGES: 218
AUTHOR(S): ADDRESSEE(S):

DESCRIPTION: Focused Feasibility Study for the Gould Superfund Site, Portland, Oregon, Volume II, Appendices A and B [Redacted Copy, Business Confidential Information (Appendix B) Removed]

3. 5. 4. . V1028956 DOC ID: 40665
DATE: 9/30/94 PAGES: 218
AUTHOR(S): ADDRESSEE(S):

DESCRIPTION: Focused Feasibility Study for the Gould Superfund Site, Portland, Oregon, Volume III, Appendices C through F [Redacted Copy, Business Confidential Information (Appendices C, D & F) Removed]

SUB-HEAD: 3. 5. 5. . Vol. Amended Remedy Document

:

3. 5. 5. . V1028943 DOC ID: 40649
DATE: 1/26/96 PAGES: 300
AUTHOR(S): ADDRESSEE(S):

DESCRIPTION: Amended Remedy Document for the Gould Superfund Site, Portland, Oregon

SUB-HEAD: 3. 5. 6. . Vol. Proposed ROD Amendment

:

3. 5. 6. . V1028977 DOC ID: 40784
DATE: 3/29/96 PAGES: 12
AUTHOR(S): ADDRESSEE(S):
EPA Unknown
DESCRIPTION: Proposed ROD Amendment, Gould Superfund Site, Portland, Oregon

SUB-HEAD: 3. 5. 6. 1. Vol. Comments

:

3. 5. 6. 1. V1050819 DOC ID: 68066
DATE: 4/18/96 PAGES: 1
AUTHOR(S): ADDRESSEE(S):
Tom Zelenka/Schnitzer Investment Corp. Chip Humphrey/EPA
DESCRIPTION: Letter requesting an extension of the comment period for the Gould Superfund Site Proposed ROD Amendment.

3. 5. 6. 1. V1050820 DOC ID: 68067
DATE: 5/31/96 PAGES: 19
AUTHOR(S): ADDRESSEE(S):

DESCRIPTION: Comments on Gould Superfund Site Proposed ROD Amendment.

3. 5. 6. 1. V1050821 DOC ID: 68068
DATE: 6/28/96 PAGES: 12
AUTHOR(S): ADDRESSEE(S):
Michael C. Veysey/Gould, Inc.
Ted Yackulic/EPA
DESCRIPTION: Response to Schnitzer Investment Corporation's Comments on Gould Superfund Site/Proposed ROD Amendment.

3. 5. 6. 1. V1050822 DOC ID: 68069
DATE: 7/23/96 PAGES: 7
AUTHOR(S): ADDRESSEE(S):
Tom Zelenka/Schnitzer Investment Corp. Chip Humphrey/EPA
Ted Yackulic/EPA
DESCRIPTION: Letter responding to Gould's 6/28/96 letter and clarifying Schnitzer's concerns about the proposed remedy.

HEADING: 8. 0. . . ENFORCEMENT
SUB-HEAD: 8. 1. . . Vol. Correspondence
SUB-HEAD: 8. 1. 1. . Vol. Unilateral Administrative Order

Correspondence

:

8. 1. 1. . V1028972 DOC ID: 40723
DATE: 5/24/94 PAGES: 3
AUTHOR(S): ADDRESSEE(S):
Carol A. Rushin/EPA Michael C. Veysey/Gould, Inc.
DESCRIPTION: Notice of Additional Response Actions Required Pursuant to Administrative Order, In the Matter of the Gould Superfund Site, EPA Docket No. 1091-01-10-106 ("Gould UAO")

8. 1. 1. . V1028973 DOC ID: 40724
DATE: 8/ 1/94 PAGES: 2
AUTHOR(S): ADDRESSEE(S):
Randall F. Smith/EPA James E. Benedict/Cable Huston Benedict & Ferris
DESCRIPTION: Notice and Directive for Performance of Additional Response Actions Pursuant to Administrative Order, In the Matter of Gould Superfund Site, EPA Docket No. 1091-01-10-106 (Gould UAO)

8. 1. 1. . V1028974 DOC ID: 40725
DATE: 8/17/94 PAGES: 2
AUTHOR(S): ADDRESSEE(S):
Ted Yackulic/EPA Michael C. Veysey/Gould, Inc.
DESCRIPTION: Letter expressing concern about Gould's August 3, 1994 letter and the possibility that the Gould UAO Respondents may discontinue compliance with the Gould UAO

8. 1. 1. . V1028975 DOC ID: 40726
DATE: 3/31/95 PAGES: 3
AUTHOR(S): ADDRESSEE(S):
Randall F. Smith/EPA
DESCRIPTION: Notice of Additional Response Actions Pursuant to Administrative Order, In the Matter of the Gould Superfund Site, EPA Docket No. 1091-01-10-106 ("Gould UAO")

SUB-HEAD: 8. 3. . . Vol. Administrative Orders

:

8. 3. . . V1028944 DOC ID: 7389
DATE: 1/22/92 PAGES: 100
AUTHOR(S): ADDRESSEE(S):
Unknown
DESCRIPTION: Administrative Order, EPA Docket No 1091-01-10-106

APPENDIX D

Summary of Design Requirements

APPENDIX D

Summary of Design Requirements

PAGE	PARA	TEXT
12	3	1) The design needs to provide for adequate control of water during the filling of the East Doane lake remnant, and monitoring and control of potential impacts from displacement of contaminants in East Doane lake water and sediments. 2) The OCF must be designed to allow for implementation of future groundwater cleanup actions to be performed by Rhone-Poulenc as required by DEQ. This may reduce the area on the Gould property available for the on-site containment facility. 3) The OCF must be designed to provide control of stormwater runoff and leachate.
13	5	A mitigation/restoration plan will be required to compensate for the loss of the wetlands and open water habitat as part of the remedial action.
19	2	A detailed design phase will be required, however, to ensure that construction and operation of the OCF will be adequately protective. The design will include special considerations for dredging and filling of the East Doane lake remnant and handling of site materials.
20	3	Perform design studies to evaluate site constraints and design parameters, including the following: consolidation and settlement, lateral and vertical support, dewatering sediments, stormwater runoff and control, leachate collection, treatment and disposal, and hydrogeologic impact of filling East Doane lake remnant and the open excavation (also known as the Lake Area or Phase III Area) portion of the Rhone-Poulenc property;
21	1	A proposal identifying work to be performed, including at least one off-site mitigation proposal, shall be submitted with the final design report;
24	5	The OCF will be designed to meet minimum technology requirements for RCRA Subtitle C landfills, including liners, leachate collection, and a cap.

APPENDIX D (Continued)

Summary of Design Requirements

25	4	Potential future industrial uses of the Gould property will be considered in the design of the facility to the extent practicable.
25	5	Final design of the containment facility will be subject to approval by EPA.
27	5	Dredging and filling of the East Doane lake remnant is subject to the requirements of Section 404 of the Clean Water Act, and a mitigation/restoration plan will be required.
27	6	The OCF will be constructed above the water table and will be designed, constructed and operated to meet 40 CFR 264 Subpart N requirements for landfills, including: 1) 264.301 design and operating requirements for liners and leachate collection systems, 2) 264.303 monitoring and inspection requirements, 3) 264.310 closure and post-closure care requirements for covers which minimize migration of liquids, function with minimum maintenance, and provide long-term integrity.

ATTACHMENT B

SCOPE OF WORK FOR
THE EARLY REMEDIAL ACTION AND REMEDIAL DESIGN

GOULD SUPERFUND SITE, SOILS OPERABLE UNIT

I. PURPOSE

The purpose of this Scope of Work (SOW) is to set forth requirements for implementation of portions of the remedial action and the remedial design as set forth in the Record of Decision (ROD) Amendment, which was signed by the Regional Administrator of the United States Environmental Protection Agency (U.S. EPA), Region 10 on June 3, 1997, for the Gould Superfund Site, Soils Operable Unit (Site). The Respondents shall follow the ROD Amendment, the SOW, the approved Remedial Design Work Plan, the approved Early Remedial Action (ERA) Work Plan, U.S. EPA Superfund Remedial Design and Remedial Action Guidance and any additional guidance provided by U.S. EPA in submitting deliverables for designing and implementing the remedial action at the Gould Site.

II. DESCRIPTION OF THE REMEDIAL ACTION

Respondents shall design and implement the Remedial Action to meet the performance standards and specifications set forth in the ROD Amendment and this SOW. Performance standards shall include cleanup standards, standards of control, quality criteria, and other substantive requirements, criteria, or limitations including all Applicable or Relevant and Appropriate Requirements (ARARs) set forth in the ROD Amendment, SOW, and/or Unilateral Administrative Order.

The major components of the remedial action selected in the ROD Amendment are as follows:

* Perform design studies to evaluate Site constraints and design parameters for, at least, consolidation and settlement, lateral and vertical support of the OCF, dewatering sediments, and the hydrogeologic impact of filling East Doane Lake remnant and the open excavation in the Lake Area (previously referred to as the Phase III Area)

portion of the Rhone-Poulenc property;

* Construction of an OCF, which has a leachate collection system and allows for implementation of future Rhone-Poulenc cleanup actions, on the Gould property;

* Excavation and dewatering of East Doane Lake sediments contaminated above RCRA characteristic hazardous waste levels;

* Excavation of the remaining battery casings on the Gould property;

* Treatment (stabilization or fixation) of the lead fines stockpile (S-15), the screened Gould excavation stockpile (S-22); and other lead contaminated material identified as principal threat waste;

* Consolidating contaminated material, including sediments, treated and untreated stockpiled materials, casings, soil and debris in the lined and capped OCF;

* Filling the East Doane Lake remnant and the open excavation in the Lake Area of the Rhone-Poulenc property;

* Institutional controls, such as deed restrictions or environmental protection easements, which (1) provide EPA access for the purpose of evaluating the remedial action, and (2) limit future use of properties within the Site to industrial operations or other uses compatible with the protective level of cleanup achieved after implementation of the selected remedial action, and to uses which do not damage the OCF cap and liner system or cause releases of buried materials;

* Performing groundwater monitoring to ensure the effectiveness of the cleanup and that contaminants were not mobilized during its implementation; and

* Long-term operation and maintenance requirements and reviews conducted no less often than every five (5) years to ensure the remedy continues to provide adequate protection of human health and the environment.

The selected remedy will also allow off-site disposal of

contaminated materials from the Gould site at regulated Subtitle D or Subtitle C disposal facilities.

III. PERFORMANCE STANDARDS

A. Within the Operable Unit remedial action areas, surface soil with lead concentrations of 1,000 ppm or above shall be excavated and placed in the OCF.

B. The Respondents shall treat the lead fines stockpile (S-15) the screened excavation stockpile (S-22) and soil, sediment, and other lead contaminated material that is considered principle threat waste material as described in the ROD Amendment (material above 40,000 ppm total lead). Treatment shall involve solidification or fixation so that it no longer exhibits the RCRA hazardous characteristic of TCLP toxicity. After treatment, Respondents shall dispose of the treated material and other residues in the OCF or, if specifically approved by EPA, at an off-site landfill.

C. Contaminated waste shipped off-site must meet all applicable regulations including RCRA requirements for defining, characterizing and listing hazardous waste (40 CFR 261), land disposal restrictions (40 CFR 268) and EPA's Off-Site Disposal Rule (40 CFR 300.440). Any off-site transportation of RCRA characteristic soil must comply with RCRA hazardous waste manifesting and transporter requirements (40 CFR 262 subpart B and 40 CFR 263), the Department of Transportation Hazardous Materials Regulations which address shipment of any hazardous material off-site, and Oregon Administrative Rules (OAR Chapter 340, Division 101-105).

D. On-site excavation of contaminated soils and sediments will be by conventional protective methods. During these activities, air monitoring will be conducted and dust suppressive measures will be utilized to control the release of dust and particulates. These measures will comply with the applicable federal Clean Air Act requirements (40 CFR Part 50) and Oregon Administrative Rules.

E. Occupational Safety and Health Act (OSHA) requirements (29 CFR Part 1910 and 1926) pertain to workers engaged in response or other hazardous waste operations. Lead-contaminated soil excavation is considered a hazardous waste operation at this Site.

F. Dredging and filling of the East Doane Lake remnant is subject to the requirements of Section 404 of the Clean Water Act, and a mitigation/restoration plan is required. A mitigation/restoration plan shall be submitted to U.S. EPA prior to backfilling the East Doane Lake remnant. The Respondents shall consult with U.S. EPA in the preparation of the mitigation/restoration plan and shall implement actions in the plan as approved by U.S. EPA.

G. The OCF shall be constructed above the water table and will be designed, constructed and operated to meet 40 CFR 264 Subpart N requirements for landfills, including: 1) 264.301 design and operating requirements for liners and leachate collection systems, 2) 264.303 monitoring and inspection requirements, 3) 264.310 closure and post-closure care requirements for covers which minimize migration of liquids, function with minimum maintenance, and provide long-term integrity. 40 CFR 264 Subpart G, Closure and Post-Closure requirements are also relevant and appropriate requirements, specifically 1) 264.111 closure performance standard, 2) 264.114 disposal/decontamination requirements for soils, equipment, and structures, and 3) 264.117 post-closure care and use of property.

H. Stormwater runoff and leachate collected from the OCF will be managed in accordance with requirements of the Clean Water Act and Oregon Administrative Rules.

I. Respondents shall implement monitoring program(s) to evaluate and ensure that the construction and implementation of the Remedial Action comply with approved plans and design documents and performance standards. Respondents shall submit monitoring programs as part of the Remedial Design Work Plan, which shall address the specific components of the remedial action. Each sample shall be analyzed for a

list of parameters approved by U.S. EPA during design.

J. Respondents shall maintain a fence at the Site to prevent access and vandalism to the Site. Warning signs shall be posted along the fence and at all gates. The warning signs shall advise that the area is hazardous due to chemicals in the soils which pose a risk to public health through direct contact with soils. The signs shall also provide a telephone number to call for further information.

K. Respondents shall conduct groundwater and leachate monitoring, and routine maintenance as part of the long term requirements to be established in the O&M Plan. Groundwater monitoring will be required to ensure that the remedy is protective of Site groundwater and complies with RCRA closure and post-closure requirements

IV. SCOPE OF EARLY REMEDIAL ACTION AND REMEDIAL DESIGN

The Early Remedial Action/Remedial Design shall consist of four tasks. All plans are subject to EPA approval.

Task 1: Early Remedial Action Work Plan

Task 2: Early Remedial Action Construction

A. Preconstruction Meeting
B. Prefinal Inspection
C. Final Inspection

Task 3: Remedial Design Work Plan

Task 4: Remedial Design Phases

A. Preliminary Design
B. Prefinal Design
C. Final Design

Task 1: Early Remedial Action Work Plan

The Respondents shall submit an Early Remedial Action (ERA) Work Plan which includes a detailed description of early remediation and construction activities, including air and groundwater monitoring. The ERA Work Plan shall, at a minimum, include the methodologies, plans, and schedules for preliminary site preparation, including the excavation and temporary stockpiling of East Doane Lake contaminated sediments and the placement of clean fill in East Doane Lake. The ERA Work Plan shall include a project schedule for each major activity and submission of deliverables generated during the ERA. The Respondents shall submit an ERA Work Plan in accordance with Section VI of this SOW.

Task 2: Early Remedial Action Construction

The Respondents shall implement the Early Remedial Action as detailed in the approved ERA Work Plan. The following activities shall be completed in constructing the Early Remedial Action.

A. Preconstruction inspection and meeting:

The Respondents shall participate with U.S. EPA and the State in a preconstruction inspection and meeting to:

1. Review methods for documenting and reporting inspection data;

2. Review methods for distributing and storing documents and reports;

3. Review work area security and safety protocol;

4. Conduct a Site walk-about to verify that the design criteria, plans, and specifications are understood and to review material and equipment storage locations.

The preconstruction inspection and meeting shall be documented by a designated person and minutes shall be transmitted to all parties.

B. Prefinal inspection:

Within 20 days after Respondents make preliminary

determinations that construction is complete, the Respondents shall notify U.S. EPA and the State for the purposes of conducting an Early Remedial Action prefinal inspection. The prefinal inspection shall consist of a walk-through inspection of the entire Facility with U.S. EPA. The inspection is to determine whether the project is complete and consistent with the contract documents and the Early Remedial Action Work Plan. Any outstanding construction items discovered during the inspection shall be identified and noted. The prefinal inspection report shall outline the outstanding construction items, actions required to resolve items, completion date for these items, and a proposed date for final inspection.

Task 3: Remedial Design Work Plan

The Respondents shall submit a Work Plan which shall document the overall management strategy for performing the design, construction, operation, maintenance, and monitoring of Remedial Actions for U.S. EPA to review and approve. The plan shall document the responsibility and authority of all organizations and key personnel involved with the implementation and shall include a description of qualifications of key personnel directing the Remedial Design, including contractor personnel. The Work Plan shall also contain a schedule of Remedial design activities. The Respondents shall submit a Remedial Design Work Plan in accordance with § IX and Paragraph 9.19 of the Unilateral Administrative Order and Section VI of this SOW.

This remedial design will require pre-design studies to provide information necessary to fully implement the remedial design and remedial action. This RD Work Plan shall include, at a minimum, a pre-design QAPP, Health and Safety plan, Field Sampling Plan, and schedule to delineate the extent of contamination.

The Respondents shall implement the pre-design work in accordance with the final RD Work Plan. The results of the pre-design studies shall be included with the 30 percent design.

Task 4: Remedial Design Phases

Respondents shall prepare construction plans and specifications to implement the Remedial Actions at the Site as described in the ROD and this SOW. Plans and specifications shall be submitted in accordance with the schedule set forth in Section V below. Subject to approval by U.S. EPA, Respondents may submit more than one set of design submittals reflecting different components of the Remedial Action. All plans and specifications shall be developed in accordance with U.S. EPA's Superfund Remedial Design and Remedial Action Guidance (OSWER Directive No. 9355.0-4A) and shall demonstrate that the Remedial Action shall meet all objectives of the ROD, CD, and this SOW, including all Performance Standards. Respondents shall meet regularly with U.S. EPA to discuss design issues.

A. Preliminary Design

Respondents shall submit the Preliminary Design when the design effort is approximately 30 percent complete. The Preliminary Design submittal shall include or discuss, at a minimum, the following:

- Preliminary plans, drawings, and sketches, including design calculations;

- Results of treatability studies and additional field sampling:

- Design assumptions and parameters, including design restrictions, process performance criteria, appropriate unit processes for the treatment train, and expected removal or treat Design

B. Prefinal Design

Respondents shall submit the Prefinal Design when the design effort is approximately 90 percent complete. The Prefinal Design shall fully address all comments made to the preceding design submittal. The Prefinal Design submittal shall include those elements listed for the Preliminary Design, as well as, the following:

- Draft Performance Standard Verification Plan;

- Draft Construction Quality Assurance Plan;
- [Draft QAPP/Draft Health and Safety Plan/Draft Field Sampling Plan/Draft ment efficiencies for both the process and waste (concentration and volume);

- Proposed cleanup verification methods, including compliance with Applicable or Relevant and Appropriate Requirements (ARARs);

- Outline of required specifications;

- Proposed siting/locations of processes/construction activity;

- Expected long-term monitoring and operation requirements;

- Real estate, easement, and permit requirements;

- Preliminary construction schedule, including contracting strategy.

- Contingency Plan.

C. Final Design

Respondents shall submit the Final Design when the design effort is 100 percent complete. The Final Design shall fully address all comments made to the Prefinal Design and shall include reproducible drawings and specifications suitable for bid advertisement. the Prefinal Design shall serve as the Final Design if U.S. EPA has no further comments and issues the notice to proceed.

The Final Design submittals shall include those elements listed for the Prefinal Design, as well as the following:

- Final Performance Standard Verification Plan;

- Final Construction Quality Assurance Plan;

- Final QAPP/Final H&S Plan/Final FSP/Final Contingency Plan;

- Draft Operation and Maintenance Plan;

- Capital and Operation and Maintenance Cost Estimate. This cost estimate shall refine the FS cost estimate to reflect the detail presented in the Final Design;

- Final project Schedule for the construction and implementation of the Remedial Action which identifies timing for initiation and completion of all critical path tasks. The final project schedule submitted as part of the Final Design shall include specific dates for completion of the project and major milestones.

V. CONTENT OF SUPPORTING PLANS

The documents listed in this section--the Quality Assurance Project Plan, the Field Sampling Plan, the Health and Safety Plan, the Contingency Plan, and the Construction Quality Assurance Plan--are documents which must be prepared and submitted as outlined in this SOW. The following section describers the required contents of each of these supporting plans.

A. Quality Assurance Project Plan

The Respondents shall develop a Site-specific Quality Assurance Project Plan (QAPP), covering sample analysis and data handling for samples collected in all phases of future Site work, based upon the Unilateral Order and guidance provided by U.S. EPA. The QAPP shall be consistent with the requirements of the EPA Contract Lab Program (CLP) for laboratories proposed outside the CLP. The QAPP shall, at a minimum, include:

Project Description
- Facility Location History
- Past Data Collection Activity
- Project Scope
- Sample Network Design
- Parameters to be Tested and Frequency
- Project Schedule

Project Organization and Responsibility

Quality Assurance Objective for Measurement Data
- Level of Quality Control Effort
- Accuracy, Precision, and Sensitivity of Analysis
- Completeness, Representativeness, and Comparability

Sampling Procedures

Sample Custody
- Field Specific Custody Procedures
- Laboratory Chain-of-Custody Procedures

Calibration Procedures and Frequency
- Field Instruments/Equipment
- Laboratory Instruments

Analytical Procedures
- Non-Contract Laboratory Program Analytical Methods
- Field Screening and Analytical Protocol
- Laboratory Procedures

Internal Quality Control Checks
- Field Measurements
- Laboratory Analysis

Data Reduction, Validation, and Reporting
- Data Reduction
- Data Validation
- Data Reporting

Performance and System Audits
- Internal Audits of Field Activity
- Internal Laboratory Audit
- External Field Audit
- External Laboratory Audit

Preventive Maintenance
- Routine Preventive Maintenance Procedures and Schedules
- Field Instruments/Equipment
- Laboratory Instruments

Specific Routine Procedures to Assess Data Precision, Accuracy, and Completeness

- Field Measurement Data
- Laboratory Data

Corrective Action
- Sample Collection/Field Measurement
- Laboratory Analysis

Quality Assurance Reports to Management

The Respondents shall submit a draft QAPP to U.S. EPA for review and approval. The Respondents may incorporate previously approved QAPP information in the QAPP.

B. Health and Safety Plan

The Respondents shall develop a health and safety plan which is designed to protect on-Site personnel and area residents from physical, chemical, and all other hazards posed by this remedial action. The safety plan shall develop the performance levels and criteria necessary to address the following areas.

Facility Description
Personnel
Levels of protection
Safe work practices and safe guards
Medical surveillance
Personal and environmental air monitoring
Personal protective equipment
Personal Hygiene
Decontamination--personal and equipment
Site work zones
Contaminant control
Contingency and emergency planning
Logs, reports, and record keeping

The safety plan shall follow U.S. EPA guidance and all OSHA requirements as outlined in 29 C.F.R. 1910 and 1926. The Respondents may incorporate information from previously submitted health and safety plans for the Gould Site.

Contingency Plan [Stand alone or in H&S]

Respondents shall submit a Contingency Plan describing

procedures to be used in the event of an accident or emergency at the Site. The draft Contingency Plan shall be submitted with the final design. [The final Contingency Plan shall be submitted prior to the start of construction, in accordance with the approved construction schedule.] The Contingency Plan shall include, at a minimum, the following:

1. Name of the person or entity responsible for responding in the event of an emergency incident.

2. Plan and date(s) for meeting(s) with the local community, including local, state, and federal agencies involved in the cleanup, as well as local emergency squads and hospitals.

3. First aid medical information.

4. Air Monitoring Plan (if applicable).

5. Spill Prevention, Control, and Countermeasures (SPCC) Plan (if applicable), as specified in 40 C.F.R. Part 109, describing measures to prevent and contingency plans for potential spills and discharges from materials handling and transportation.

C. Field Sampling Plan

The Respondents shall develop a field sampling plan (as described in "Guidance for Conducting Remedial investigations and Feasibility Studies under CERCLA", October 1988). The Field Sampling Plan should supplement the QAPP and address all sample collection activities.

D. Construction Quality Assurance Plan

Respondents shall submit a Construction Quality Assurance Plan (CQAP) which describes the Site-specific components of the quality assurance program which shall ensure that the completed project meets or exceeds all design criteria, plans, and specifications. The draft CQAP shall be submitted with the Prefinal Design and the [draft] final CQAP shall be submitted with the Final Design. [The final CQAP shall be submitted prior to the start of construction

in accordance with the approved construction schedule.] The CQAP shall contain, at a minimum, the following elements:

1. Responsibilities and authorities of all organizations and key personnel involved in the design and construction of the Remedial Action.

2. Qualifications of the Quality Assurance Official to demonstrate his possession of the training and experience necessary to fulfill his identified responsibilities.

3. Protocols for sampling and testing used to monitor construction.

4. Identification of proposed quality assurance sampling activities including the sample size, locations, frequency of testing, acceptance and rejection data sheets, problem identification and corrective measures reports, evaluation reports, acceptance reports, and final documentation. A description of the provisions for final storage of all records consistent with the requirements of the Consent Decree shall be included.

5. Reporting requirements for CQA activities shall be described in detail in the CQA plan. This shall include such items as daily summary reports, inspection data sheets, problem identification and corrective measures reports, design acceptance reports, and final documentation. Provisions for the final storage of all records shall be presented in the CQA plan.

VI. SUMMARY OF MAJOR DELIVERABLES/SCHEDULE

Submission	Due Date
1. Early Remedial Action (ERA) Work Plan	Thirty (30) days after effective date of Amended Order

2. Notify EPA of proposed contractor(s)	Ten (10) days after EPA approval of ERA Work Plan
3. Award ERA Contract(s)	Ten(10) days after receipt of U.S. EPA's approval of proposed contractor and Notice of Authorization to Proceed
4. Initiate ERA Construction Contract(s)Award.	Ten (10) days after ERA
5. East Doane Lake Mitigation/Restoration Plan	Thirty (30) days after U.S. EPA's approval of ERA Work Plan
6. Completion of Construction in ERA construction schedule	As approved by U.S. EPA
7. RD Work Plan	Ninety (90) days after Effective date of Amended Order
8. Preliminary Design (30 percent)	Forty-five (45) days after U.S. EPA's approval of Final RD Work Plan
9. Prefinal Design (90 percent)	Forty-five (45) days after receipt of U.S. EPA's comments on the Preliminary Design
10. Final Design (100 percent)	Thirty (30) days after receipt of U.S. EPA's comments on the Prefinal Design